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WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE
and
OREGON AGRICULTURAL EXPERIMENT STATION
and
STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above
in cooperation with other Federal, State and private organizations.

||||||| AS OF |||||
FEB. 1, 1962

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Cooperative Snow Survey and Water Supply Forecast Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
RIVER BASINS			
COLORADO AND STATE OF UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER AND OTHER AGENCIES
COLUMBIA	MONTHLY (JAN.-MAY)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
UPPER MISSOURI AND STATE OF MONTANA	MONTHLY (FEB.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
WEST-WIDE	OCT. 1, APR. 1, MAY 1	PORTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. AGR. EXP. STATION COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (FEB.-MAY)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	ORE. AGR. EXP. STATION OREGON STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

Copies of these various reports may be secured from:

Head, Water Supply Forecasting Section
Soil Conservation Service
P.O. Box 4170, Portland 8, Oregon

PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	COMPTROLLER, WATER RIGHTS BR., DEPT. OF LANDS AND FORESTS, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, SACRAMENTO, CALIF.

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

ISSUED
FEBRUARY 8, 1962

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Issued by

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SOIL CONSERVATION SERVICE	OREGON AGRICULTURAL	STATE OF OREGON
	EXPERIMENT STATION	

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WATER SUPPLY OUTLOOK for OREGON

FEBRUARY 1, 1962

Most of Oregon will probably have near adequate irrigation water supplies in 1962, although the situation in the southeastern tier of counties, Malheur, Harney, Lake and eastern Klamath is complicated by record-low stored water supplies. However, these shortages will be sufficiently overcome for this season if remaining winter storms produce at least average moisture supplies.

SNOW COVER:

Water content of the mountain snowpack varies from 15 percent above the 15 year average (1943-57) for February 1 in Harney County to 33 percent below average in the Hood River - Wasco County area where January precipitation was far below average.

In an average winter 65 percent of the total winter's "snow crop" is usually accumulated by February 1st. This year, current snow surveys on a total of 190 snow courses indicate the accumulation has reached 59 percent compared with only 48 percent one year ago.

SOIL MOISTURE:

Moisture in the top 3 or 4 feet of the upper watershed soils under the snowpack has been only partially replaced by fall rains. These soils are generally drier than last year and will soak up substantial amounts of the early snowmelt water.

RESERVOIR STORAGE:

Water stored in 21 irrigation reservoirs now totals 47 percent less than average and 26 percent more than last year. Greatest shortages are in the southeastern counties and in McKay reservoir in Umatilla County.

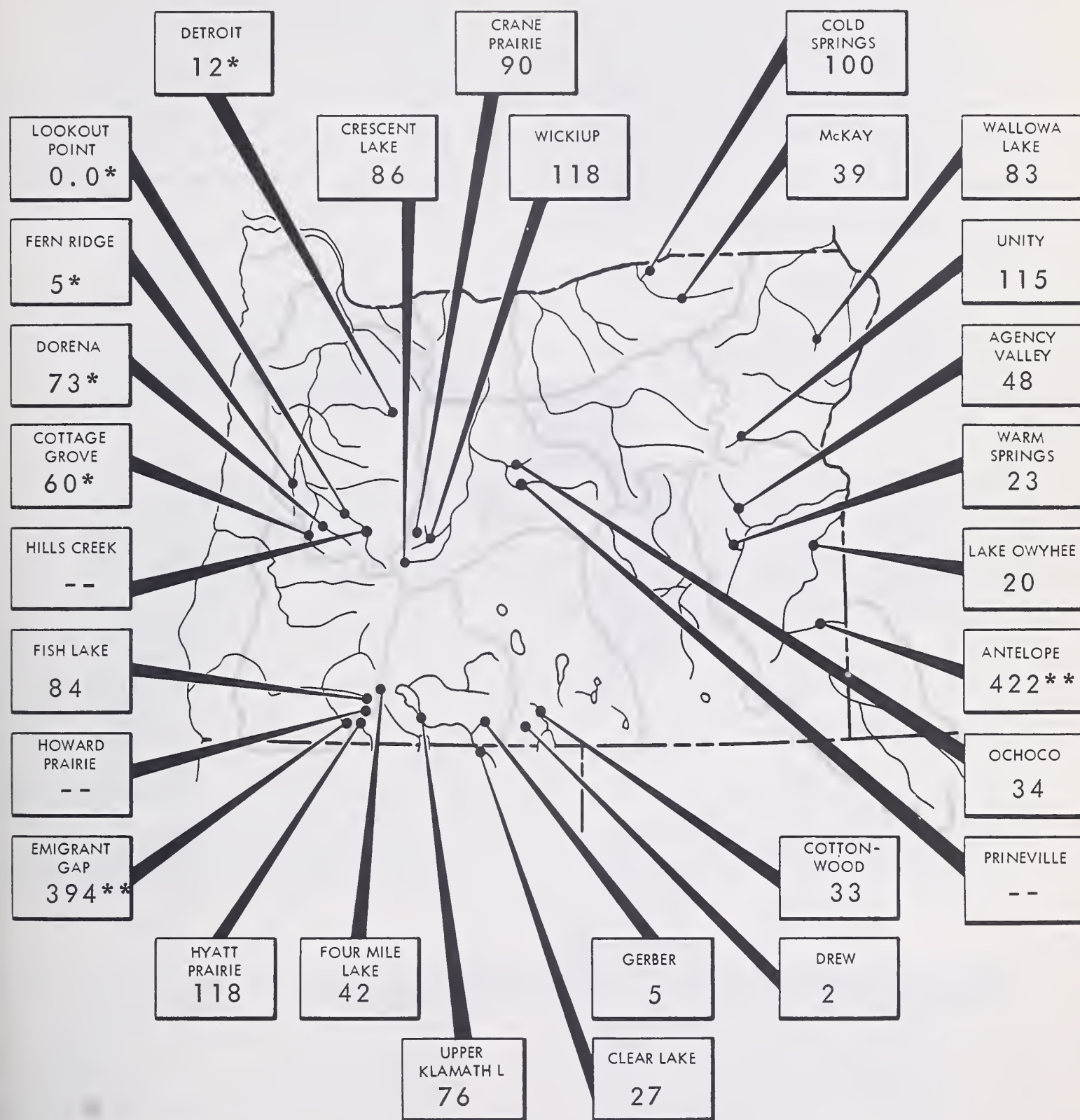
STREAMFLOW:

Forecasts of streamflow for Oregon irrigation water supplies vary from 80 to 112 percent of the 15 year average (1943-57) generally throughout the state. Two forecasts are poorer than this: the inflow to Owyhee reservoir is expected to be 61 percent average and inflow to Drew's reservoir near Lakeview is to be 68 percent of the average.

Remaining winter storms must produce at least average moisture to assure the above water supplies.

STORAGE STATUS of OREGON RESERVOIRS as percent of 1943-57, 15 year average

FEBRUARY 1, 1962



*- Multiple purpose reservoir - space reserved primarily for flood runoff.
N.R. - No report.

** - Capacity of reservoir greatly increased but current storage compared with previous average.

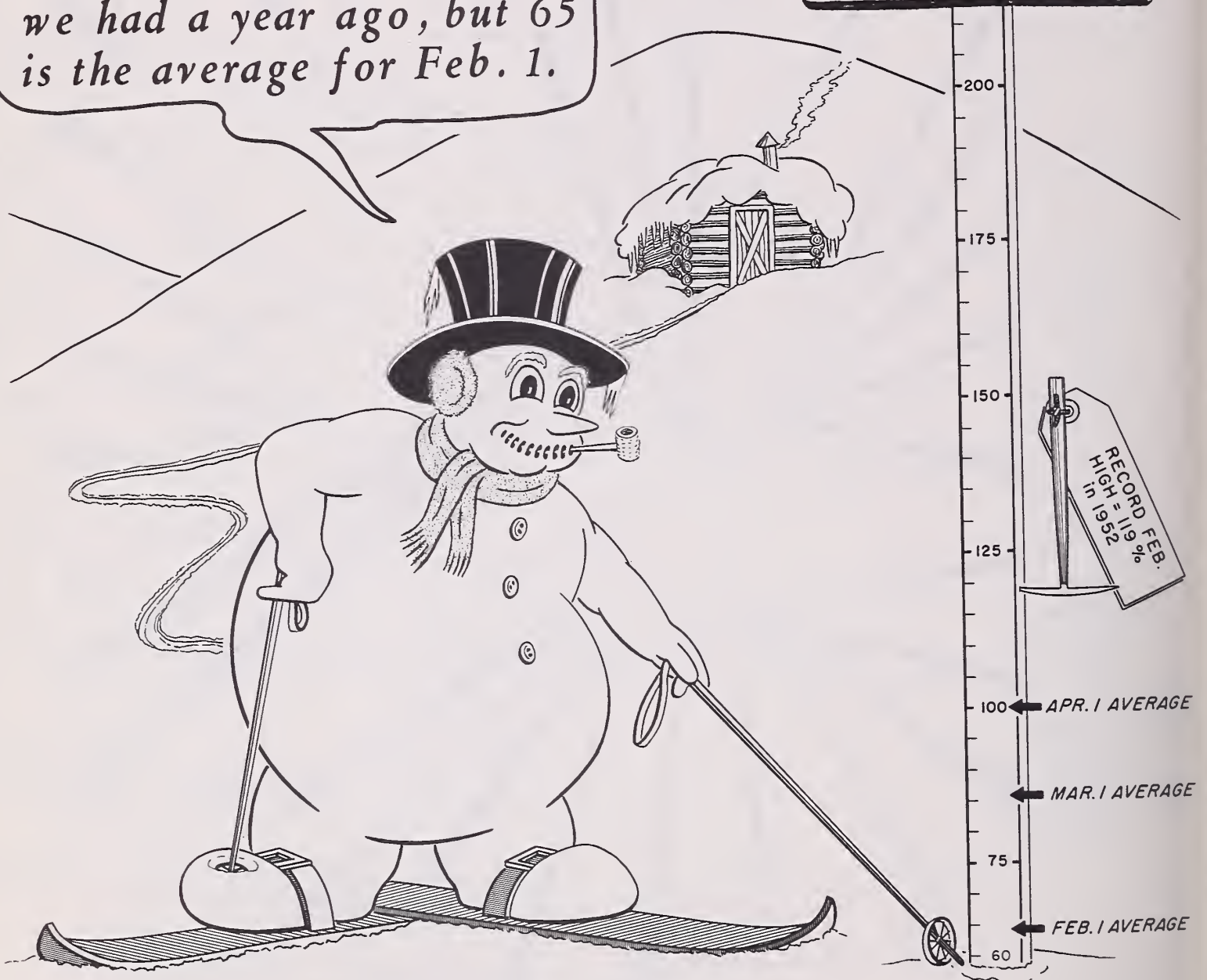
-- Short record - no average for comparison.

OREGON SNOW PACK ACCUMULATION

AS OF FEBRUARY 1, 1962

*January was too cold!
59 is still double the snow
we had a year ago, but 65
is the average for Feb. 1.*

FIGURES ARE PERCENT OF
1943-57 AVERAGE WATER
CONTENT OF SNOW PACK

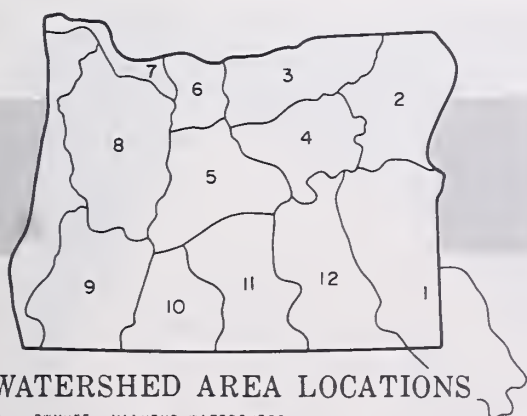
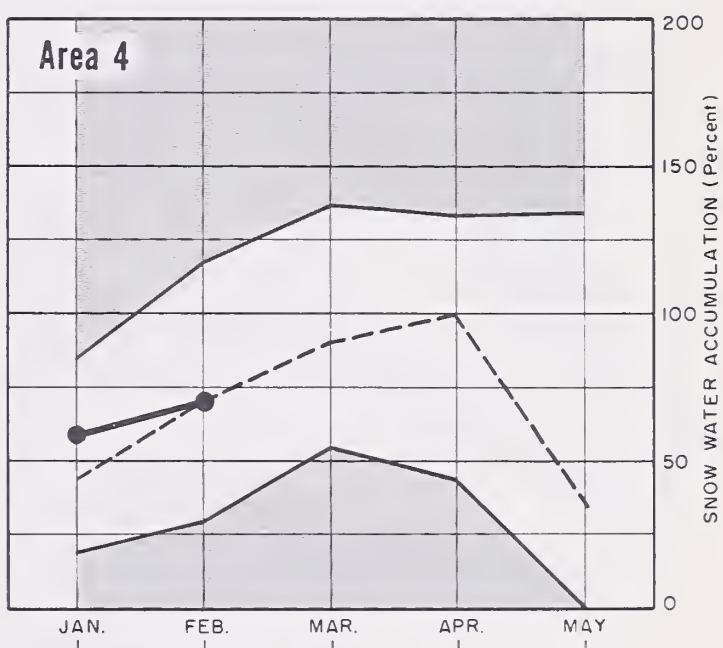
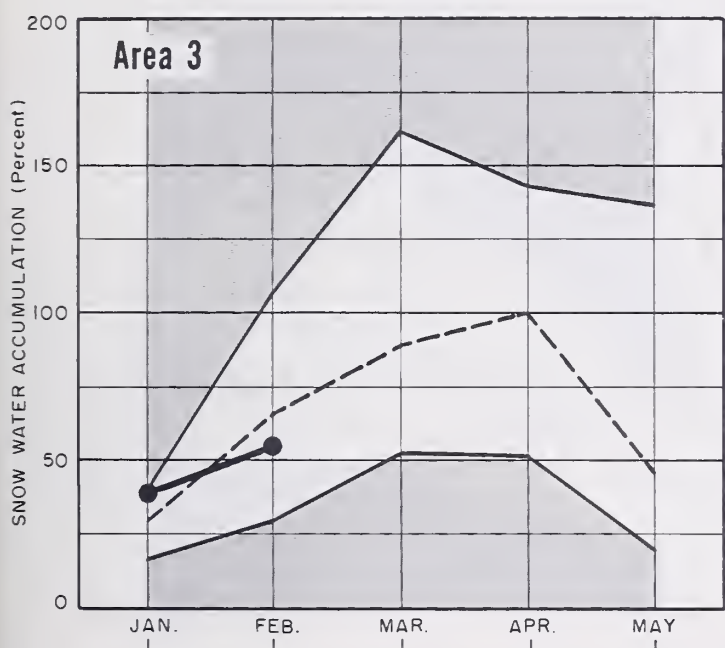
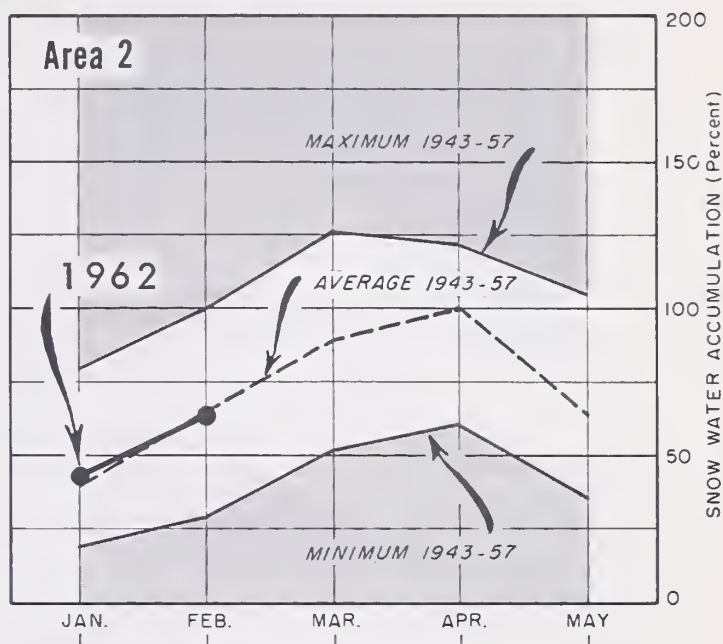
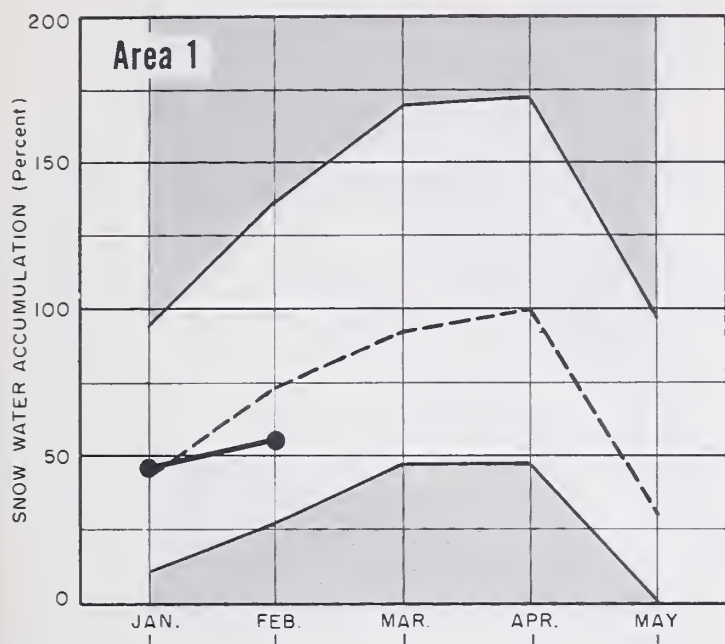


*Boy! Some Oregon
soils are sure dry
and will drink up
snow melt water.*

SNOW WATER ACCUMULATION in OREGON

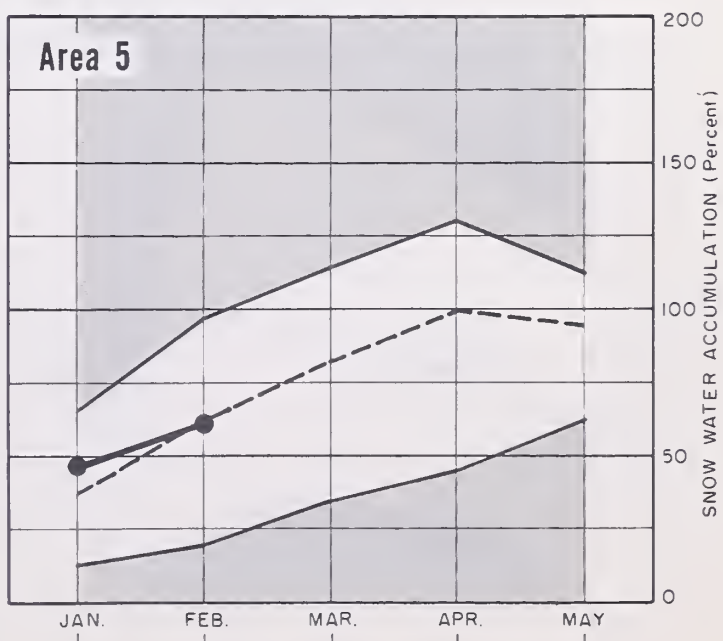
(Percent of average maximum accumulation)

FEBRUARY 1, 1962



WATERSHED AREA LOCATIONS

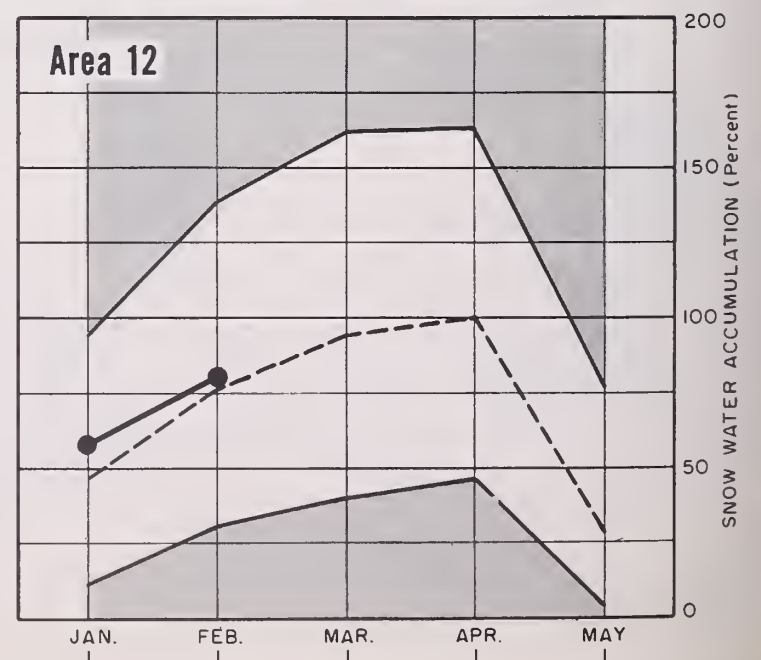
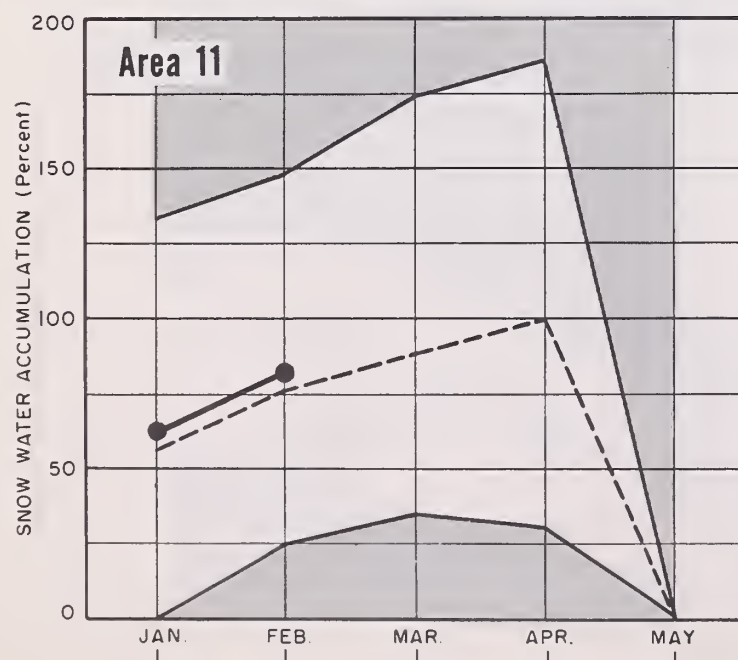
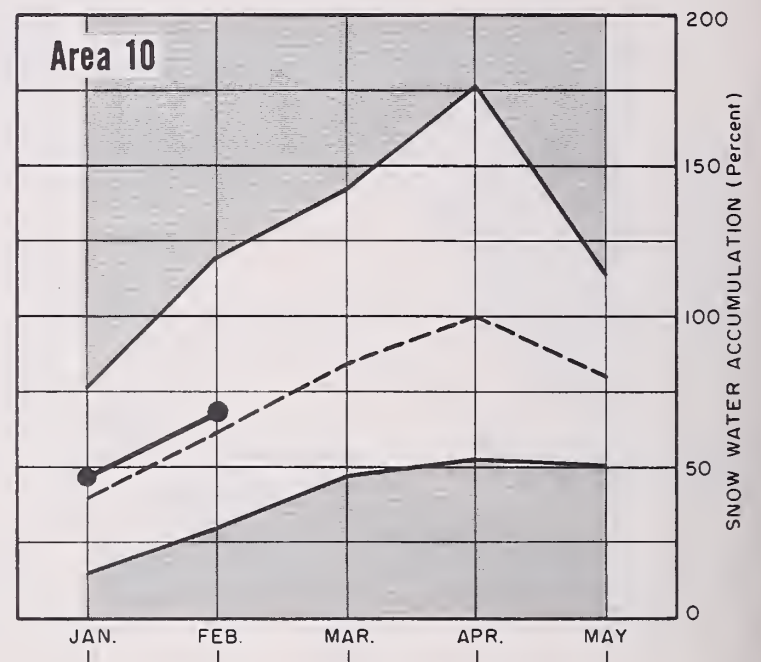
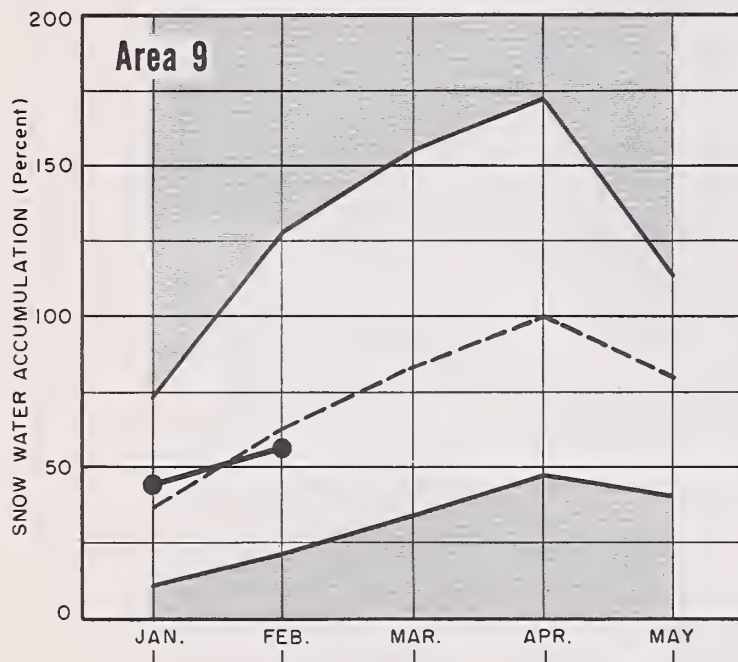
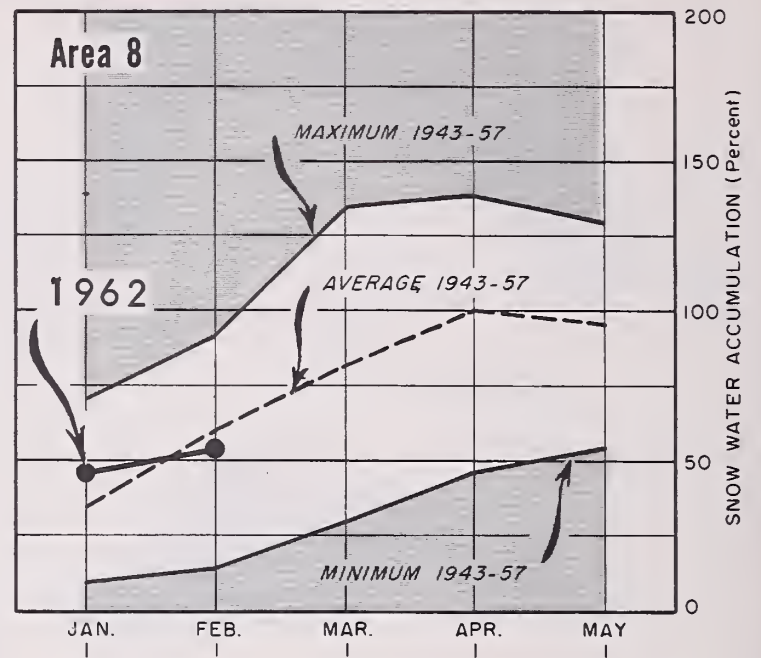
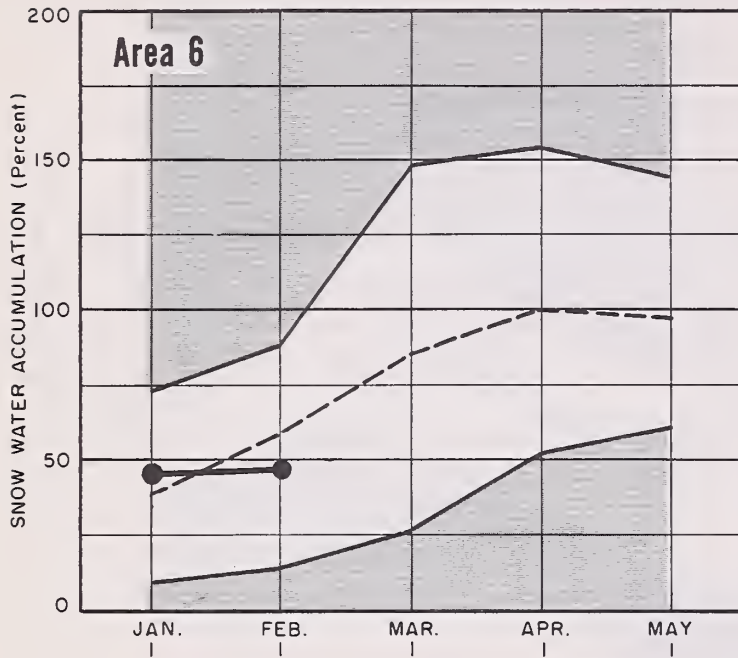
- AREA 1 - DRYHILL, MALHEUR WATERSHEDS
- AREA 2 - BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
- AREA 3 - UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
- AREA 4 - UPPER JOHN DAY WATERSHEDS
- AREA 5 - UPPER DESCHUTES, CROOKED, WATERSHEDS
- AREA 6 - HODD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
- AREA 7 - LOWER COLUMBIA WATERSHEDS
- AREA 8 - WILLAMETTE WATERSHEDS
- AREA 9 - ROGUE, UMPQUA WATERSHEDS
- AREA 10 - KLAMATH WATERSHEDS
- AREA 11 - LAKE COUNTY, GODDSE LAKE WATERSHEDS
- AREA 12 - HARNEY BASIN WATERSHEDS



SNOW WATER ACCUMULATION in OREGON

(Percent of average maximum accumulation)

FEBRUARY 1, 1962



MOUNTAIN SOIL MOISTURE in OREGON as percent of available capacity

FEBRUARY 1, 1962



● Soil Moisture Station

**Moisture studies not yet developed in these areas.*

Note: January 1 figures published for Area 1 and 12 were incorrectly computed and should have been 59 and 48 percent respectively.

VALLEY PRECIPITATION in OREGON^a

FEBRUARY 1, 1962



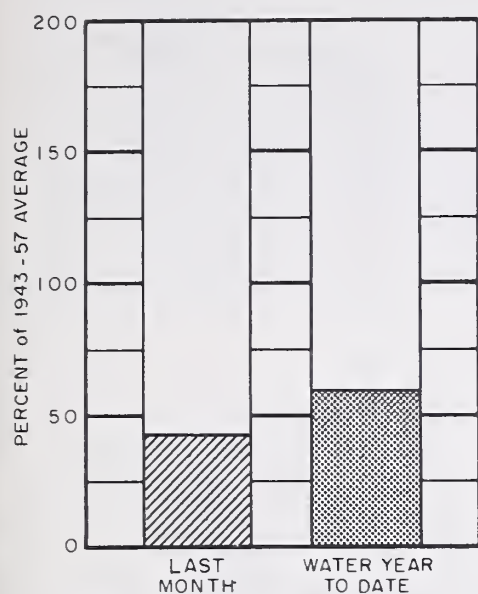
PRECIPITATION as PERCENT of the 1943 - 57 AVERAGE

STATION	LAST MONTH	WATER YEAR TO DATE ^b	STATION	LAST MONTH	WATER YEAR TO DATE ^b
BAKER APT.	179	146	LAKEVIEW	76	99
BEND	42	111	MEDFORD APT.	49	83
BURNS	51	109	NYSSA	113	94
ENTERPRISE	121	137	PENDLETON APT.	48	70
EUGENE APT	21	91	PORTLAND APT.	27	67
HEPPNER	68	72	ROSEBURG APT.	23	97
JOHN DAY	98	99	SALEM APT.	16	63
KLAMATH FALLS APT.	54	96	THE DALLES	18	80

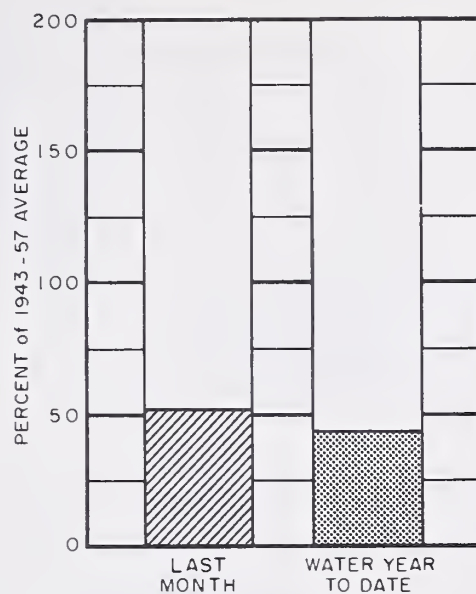
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

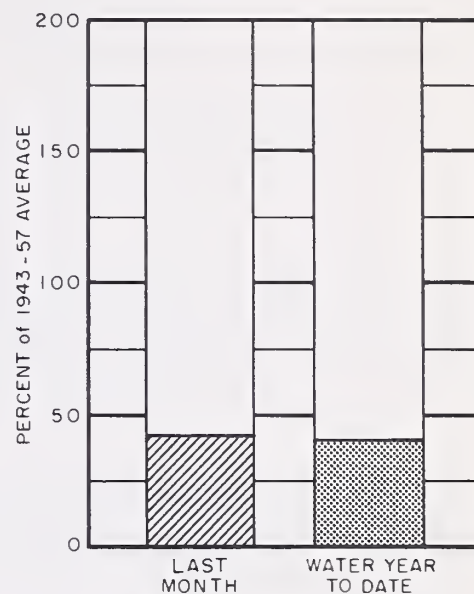
FEBRUARY 1, 1962



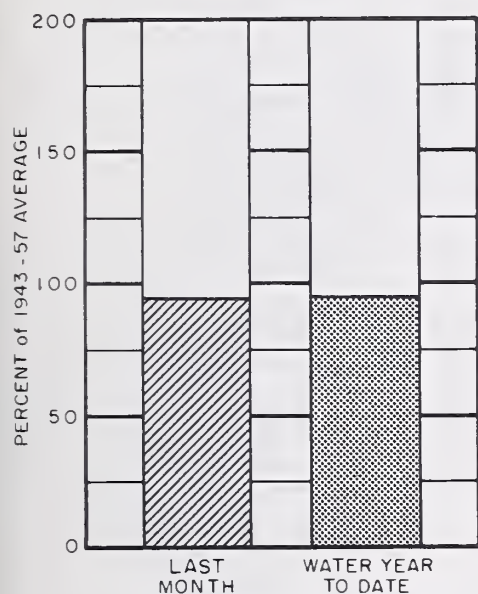
Owyhee Lake net inflow



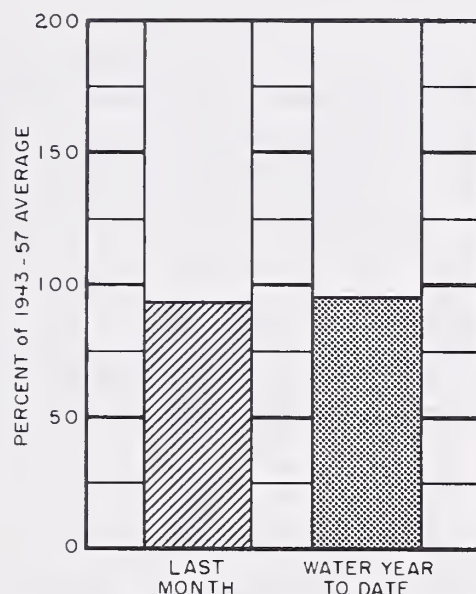
Umatilla near Umatilla



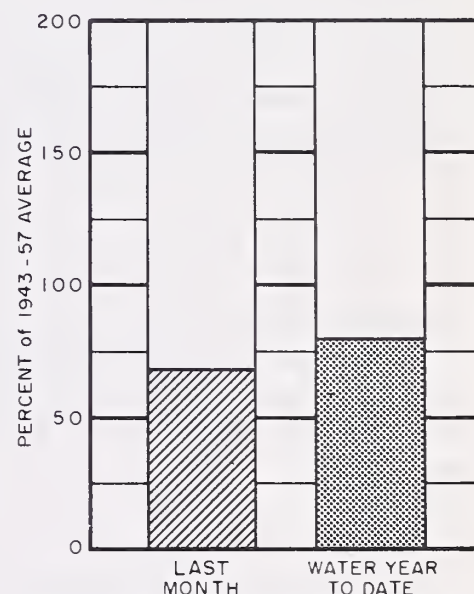
John Day at Service Creek



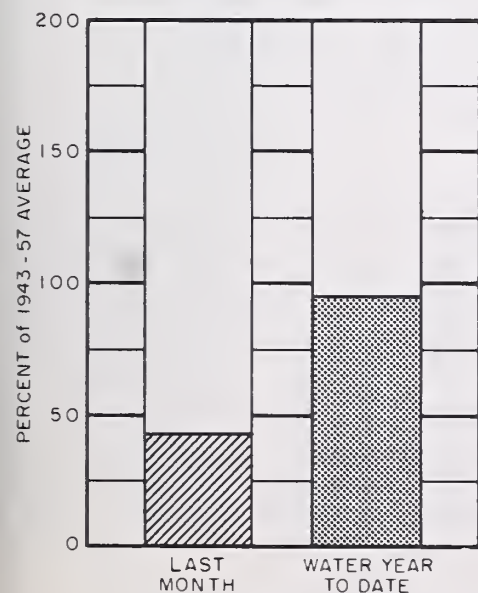
Deschutes at Moody



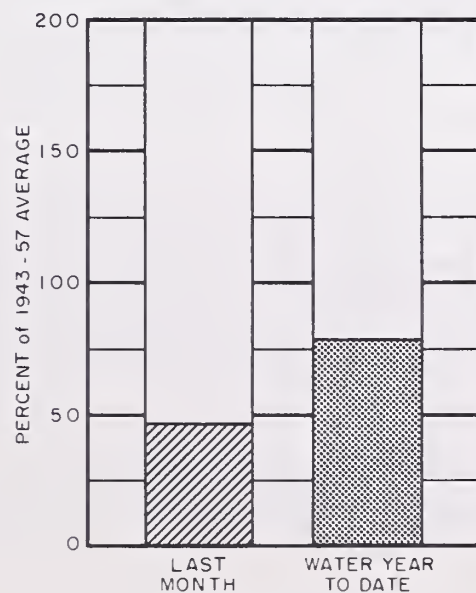
Hood and conduit near Hood River



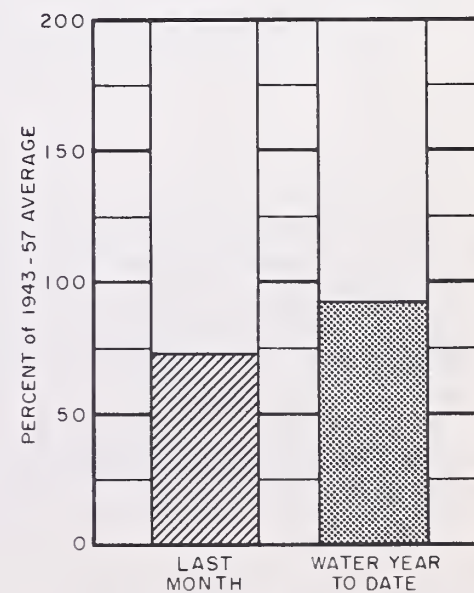
Mid. Fk. Willamette below No. Fk.



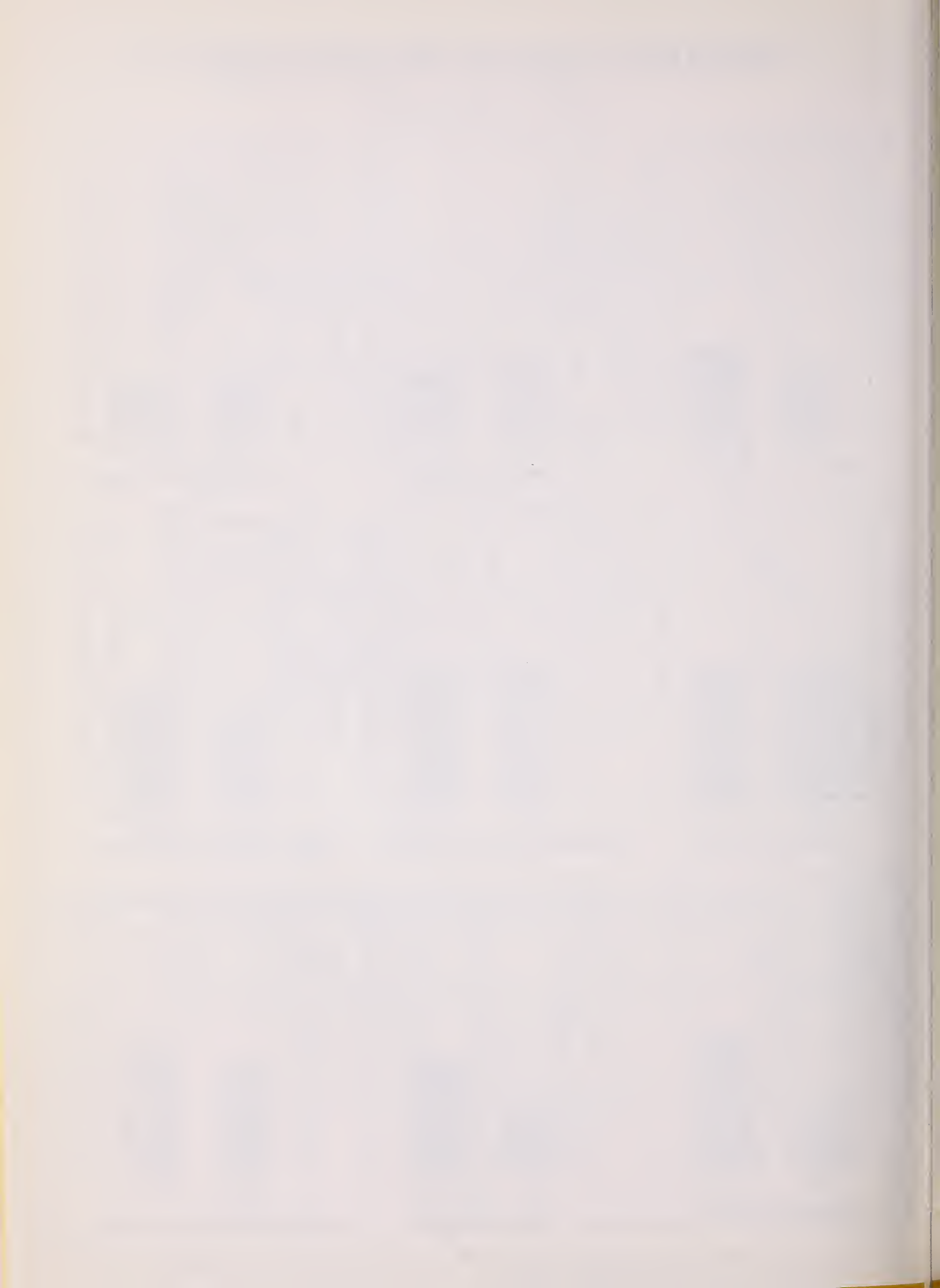
Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow



WATER SUPPLY OUTLOOK OWYHEE, MALHEUR WATERSHEDS OREGON

as of
FEBRUARY 1, 1962



U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for streamflow in Malheur County next spring and summer is the best since 1958 but stored water supplies are at or near record low and the snowpack stands on relatively dry watershed soils.

SNOW COVER

Water content of the snowpack on the Owyhee averages 18 percent less than average (1943-57) but 36 percent greater than last year at this date. On the Malheur watershed the snow averages 38 percent less than average but 134 percent greater than last year on February 1st.

SOIL MOISTURE

However, this snow lies on watershed soils which are now wet only up to half their capacity on the Malheur and up to three-fourths of capacity on the Owyhee. These dry soils will soak up some snowmelt water during the runoff period.

RESERVOIR STORAGE

Agency Valley and Warm Springs reservoirs are now holding 27,700 acre feet compared with 43,000 acre feet a year ago on February 1st. The Owyhee reservoir has 85,500 acre feet compared with 209,600 a.f. a year ago. Antelope reservoir in Jordan Valley now has 21,100 acre feet in storage and filling is being hampered by ice in the feed canal.

STREAMFLOW

A new forecast on the Malheur near Drewsey indicates the February-July flow will be about 138,000 acre feet or 111 percent of the 1943-57 average. Forecast for the April-September period is 88,000 acre feet or 109 percent of average. The North Fork at Beulah is forecast to flow about 66,000 acre feet in the April-September period.

Flow of the Owyhee River into the big reservoir is estimated to be 360,000 acre feet February through July or 61 percent of average.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Fair	Fair
Bully Creek	Fair	Fair
Cow Creek	Fair	Fair
Jordan Creek	Fair	Fair
Jordan Valley Irrig. Dist.	Average	Fair
McDermitt Creek	Fair	Fair
Oregon Canyon Creek	Fair	Fair
Owyhee Project	Average	Fair
Succor Creek	Fair	Fair
Ten Mile Creek	Fair	Fair
Vale Oregon Irrig. Dist.	Average	Fair
Warm Springs Irrig. Dist.	Average	Fair
Willow Creek	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	13.1	18.7	27.3
Antelope	55.0	21.1	- -	5.0
Owyhee	715.0	85.5	209.6	416.6
Warm Springs	191.0	14.6	24.3	64.8

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

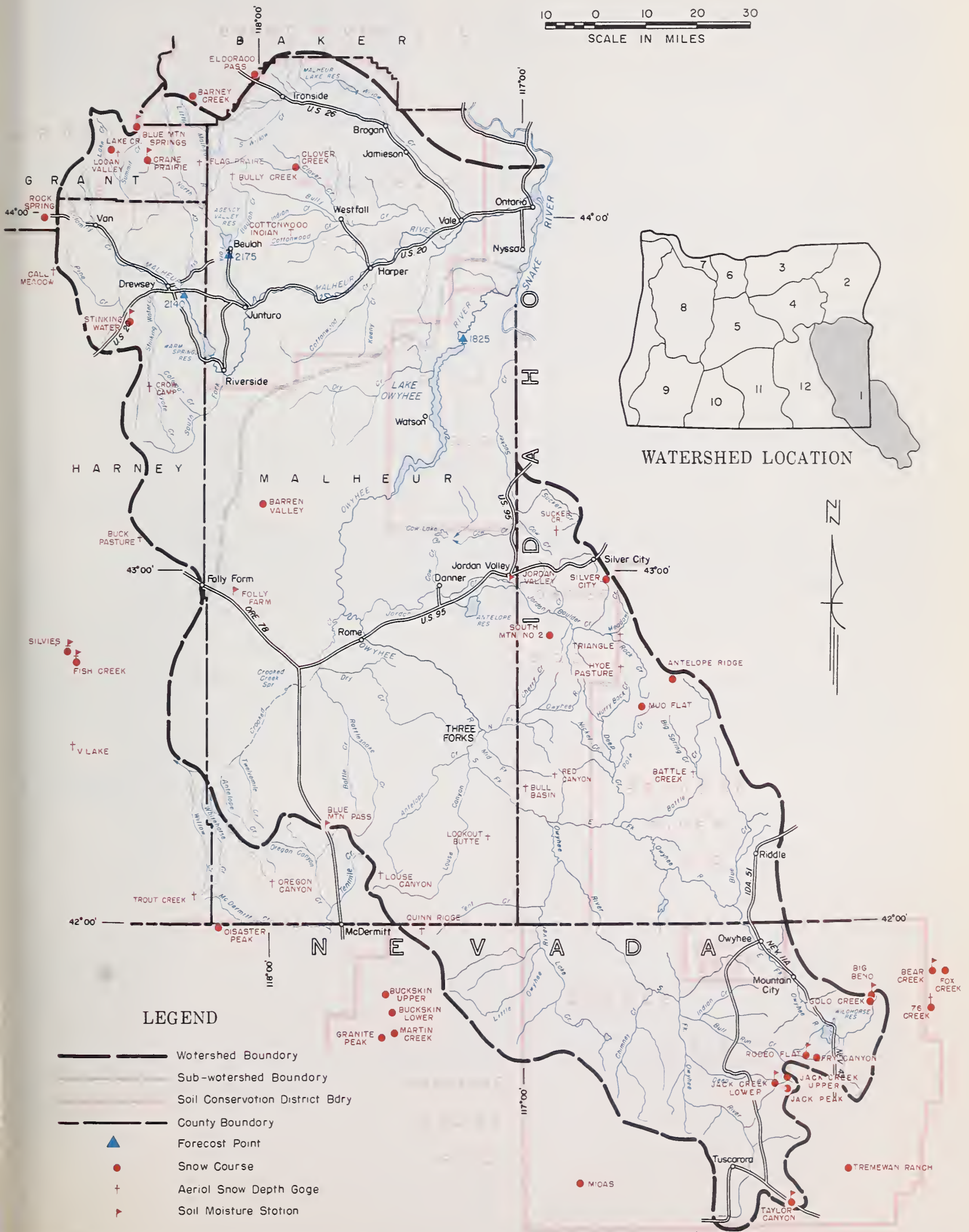
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
2140	Malheur near Drewsey	88	April-Sept.	81	109
		138	Feb.-July	124	111
2175	Malheur, North Fork at Beulah ^d	66	April-Sept.	64	103
1825	Owyhee Reservoir net Inflow ^g	360	Feb.-July	594	61

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Bear Creek (Nev.)	7800	60	7.0	c			
Big Bend (Nev.)	6700	48	9.6	1-29-62	6.7	7.4	- -
Blue Mountain Springs	5900	42	12.0	1-26-62	3.4	2.8	- -
Crane Prairie	5375	48	9.9	1-26-62	5.0	7.0	- -
Folly Farm	4450	30	6.9	12-21-61	4.0 ^j	4.8 ^{h,j}	5.3 ^{h,j}
Jack Creek, Lower (Nev.)	6800	48	4.9	1-30-62	4.4	4.5 ^h	- -
Jordan Valley	4250	48	9.8	12-21-61	4.7	5.9 ^h	5.8 ^h
Mud Flat	5500	48	5.9	1-30-62	3.1	- -	- -
Rodeo Flat (Nev.)	6800	42	6.0	1-29-62	6.0	6.0	6.0
Stinking Water Summit	4800	48	11.7	12-21-61	10.4 ^j	11.2 ^{h,j}	10.3 ^{h,j}
Taylor Canyon (Nev.)	6200	48	9.7	1-30-62	6.0	6.1	- -
Triangle	5150	48	8.8	c			

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) USBR records of inflow. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted average.

OWYHEE, MALHEUR WATERSHEDS



Owyhee, Malheur Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Antelope Ridge	5900	2/1	5	1.1	1.6	--
Barney Creek	5950	c				
Battle Creek ^e (Ida.)	5700	1/26	7	1.9	0.9	--
Bear Creek (Nev.)	7800	f				
Big Bend	6700	1/29	18	5.0	3.0	6.9*
Blue Mountain Spring	5900	1/26	35	11.3	6.6	11.3
Buck Pasture ^e (Riddle Cr.)	5700	1/26	3	0.8	0.0	--
Buckskin, Lower	6700	c				
Buckskin, Upper	7200	c				
Bull Basin ^e	5600	1/26	2	0.5	0.0	--
Bully Creek ^e	5300	1/26	9	2.4	0.0	--
Call Meadows ^e	5340	1/26	6	1.6	1.2	--
Clover Creek	4100	h				
Cottonwood-Indian ^e	4320	1/26	9	2.4	0.0	--
Crane Prairie	5375	c				
Disaster Peak	6500	c				
Eldorado Pass	4600	1/29	6	1.1	0.0	--
Fish Creek ^e	7900	1/25	39	10.9	8.4	--
Flag Prairie ^e	4750	1/26	8	2.2	0.3	--
Fox Creek	6800	c				
Fry Canyon	6700	1/29	13	3.3	3.2	6.5*
Gold Creek	6600	1/29	12	3.4	1.6	4.1*
Granite Peak	7800	1/31	20	5.6	3.6	--
Hyde Pasture ^e	5800	1/26	7	1.9	1.5	--
Jack Creek, Lower	6800	1/30	10	2.0	1.0	--
Jack Creek, Upper	7250	1/30	27	8.0	3.0	--
Jack Peak	8420	c				
Lake Creek (2 mi. south of Ranger Station)	5120	1/27	15	4.7	3.2	--
Logan Valley	5100	1/26	16	5.0	3.0	--
Lookout Butte ^e	5650	1/26	2	0.6	0.0	--
Louse Canyon ^e	6440	1/26	3	0.8	0.6	--
Martin Creek	6700	1/31	21	6.0	4.2	--
Midas	7200	c				
Mud Flat	5500	1/29	9	1.7	3.0	--
Oregon Canyon ^e	6950	1/26	14	3.9	2.4	--
Quinn Ridge ^e	6300	1/26	3	0.8	0.0	--
Red Canyon ^e	6500	1/26	10	2.6	4.2	--
Rock Spring	5100	1/29	11	2.5	1.2	4.7
Rodeo Flat	6800	1/29	11	3.0	2.7	6.4*
Silver City	6400	f				
Silvies	6900	c				
South Mountain No. 2	6340	1/29	16	5.5	3.5	8.5
Stinking Water	4800	1/29	9	2.3	T	3.6*
Taylor Canyon	6200	1/30	10	2.5	1.0	--
Tremewan Ranch	5700	1/29	6	0.8	T	--
Triangle ^e	5150	1/26	4	1.1	0.0	--
Trout Creek ^e	7800	1/26	12	3.4	3.6	--
76 Creek ^e	7100	1/29	22	6.2	4.8	--
"V" Lake ^e	6600	1/25	2	0.8	3.4	--

WATER SUPPLY OUTLOOK BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in Northeastern Oregon for the spring and summer season is satisfactory. Stored water supplies and the mountain snowpack are favorable for a near average irrigation season.

SNOW COVER

Water content of the mountain snowpack, as measured at 21 snow courses in this three county area, is 52 percent greater than last year at this date and only 4 percent less than the February 1 average for the 1943-57 period.

SOIL MOISTURE

The top 3 to 4 feet of soil on the upper watersheds under the snowpack was not completely recharged by fall rains. These soils contain moisture up to about two-thirds of capacity and will therefore soak up some of the snowmelt water next spring. Soils are somewhat drier than last year.

RESERVOIR STORAGE

Unity reservoir has 8,300 acre feet in storage compared with 7,800 a.f. at this time last year. Average storage at this date is 7,200 acre feet. Wallowa Lake has 13,200 acre feet available for use, about the same amount as last year but slightly below the 15,900 acre feet average figure.

STREAMFLOW

February-June flow of Burnt River near Hereford is forecast at 58,000 acre feet or 105 percent of the 1943-57 average. Flow of Powder River near Baker is estimated at 63,000 acre feet or 97 percent average for April-July. Catherine Creek should flow 76,000 acre feet or 104 percent average for the April-September period.

The main Grande Ronde at LaGrande is forecast at 223,000 acre feet or 91 percent average for the March-September period. Hurricane Creek is forecast at 45,000 acre feet, 92 percent average for the April-September period. Other Wallowa tributaries will flow similarly to the East Fork near Joseph which is forecast at 12,600 acre feet or 104 percent of average for April through September. The Imnaha is forecast to flow 351,000 acre feet, 112 percent average for the April-September period.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope	Average	Fair
Baker Valley	Average	Fair
Big Creek	Average	Fair
Clover Cr. (nr. No. Powder)	Average	Fair
Cove	Average	Fair
Durkee	Average	Fair
Eagle Valley	Average	Fair
Elgin	Average	Fair
Enterprise - Joseph	Average	Average
Hereford - Bridgeport	Average	Average
Imnaha River	Average	Fair
LaGrande - Island City	Average	Fair
Lostine - Wallowa	Average	Fair
No. Powder River - Wolf Cr.	Average	Fair
Pine Valley	Average	Fair
Powder River - Elk Creek	Average	Fair
Summerville	Average	Fair
Sumpter Valley	Average	Fair
Union - Hot Lake	Average	Fair
Unity	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Unity	25.2	8.3	7.8	7.2
Wallowa Lake	37.5	13.2	13.1	15.9

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3305	Bear near Wallowa	76	April-Sept.	74	103
2730	Burnt near Hereford ^d	58	Feb.-June	55	105
3200	Catherine near Union	76	April-Sept.	73	104
3190	Grande Ronde at LaGrande	218	March-July	242	90
		223	March-Sept.	245	91
3295	Hurricane near Joseph	45	April-Sept.	49	92
2920	Imnaha at Imnaha	351	April-Sept.	314	112
3300	Lostine near Lostine	137	April-Sept.	133	103
2755	Powder near Baker	65	April-Sept.	66	98
		63	April-July	65	97
3250	Wallowa, East Fork near Joseph ^d	12.6	April-Sept.	12.1	104
		10.2	April-July	9.7	105

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Blue Mountain Summit	5100	36	10.4	1-26-62	0.7	3.2	2.3
Emigrant Springs	3925	48	15.0	1-26-62	10.9	12.6	- -
Tollgate	5070	48	17.8	1-26-62	15.8	15.6	16.4

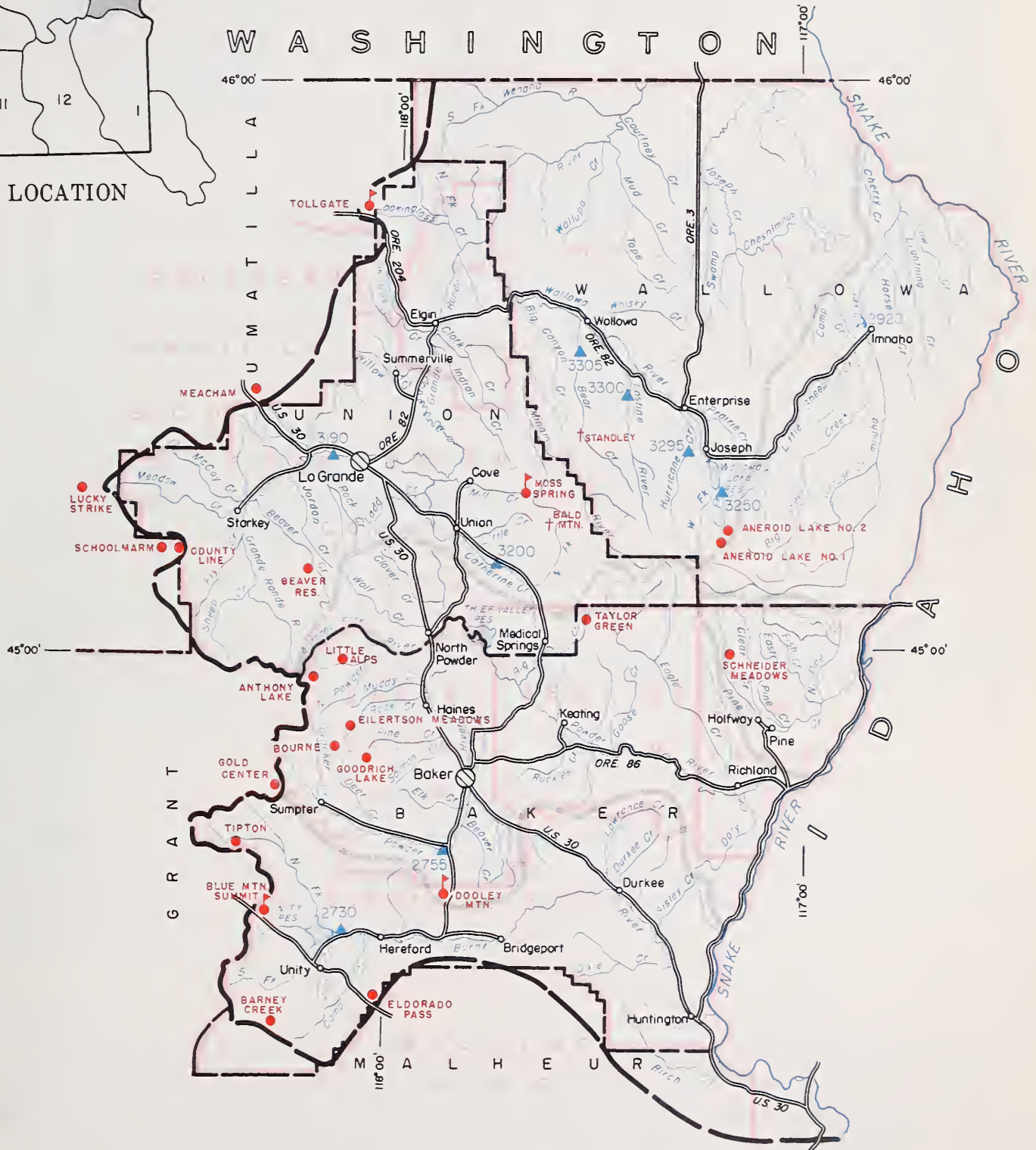
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Water content partly estimated. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted averages.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



WATERSHED LOCATION

10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ↑ Soil Moisture Station
- † Aerial Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Aneroid Lake No. 1	7480	1/27	72	27.1	19.2	24.4
Aneroid Lake No. 2	7000	1/27	60	22.4	13.6	19.2
Anthony Lake	7125	1/27	56	17.4	12.2	20.2*
Bald Mountain ^e (Ore.)	6700	1/31	70	23.1	18.0	- -
Barney Creek	5950	c				
Beaver Reservoir	5340	1/29	26	8.0	5.8	8.0
Blue Mountain Summit	5098	1/26	25	6.4	4.0	6.9
Bourne	5800	1/30	34	10.0	7.4	12.2*
County Line	4800	1/30	14	4.8	2.9	5.0*
Dooley Mountain	5430	1/25	23	5.7	3.4	6.6
Eilertson Meadows	5400	1/26	22	6.9	4.6	8.7*
Eldorado Pass	4600	1/29	6	1.1	0.0	- -
Gold Center	5340	1/30	28	7.8	5.9	9.5*
Goodrich Lake	6775	h				
Little Alps	6200	1/27	35	10.5	6.4	- -
Lucky Strike	5050	1/29	31	9.0	4.9	9.1*
Meacham	4300	1/26	20	6.3	2.8	7.1
Moss Spring	5850	1/29	53	17.4	9.2	17.1
Schneider Meadows	5400	1/26	69	22.7	15.3	21.6
Schoolmarm	4775	1/30	11	4.4	2.7	4.4*
Standley ^e	7400	1/24	59	22.4	17.5	- -
Taylor Green	5740	c				
Tipton	5100	1/26	26	7.2	5.2	8.4*
Tollgate	5070	1/26	45	16.8	8.8	19.2

WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

OREGON

as of

FEBRUARY 1, 1962



U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook is for near adequate irrigation water supplies in Umatilla, Morrow and Gilliam counties in 1962. Forecasts indicate streamflow will be better than in any year since 1958.

SNOW COVER

Water content of the mountain snowpack is practically double that of last year at this date although it is 17 percent below the 1943-57 average. Low elevation snow is a favorable factor this year.

SOIL MOISTURE

Moisture in the top 4 feet of soil immediately under the snowpack is favorable to a good runoff from melting snow. Electronic stations indicate these soils are now recharged up to 74 percent of capacity.

RESERVOIR STORAGE

Excessive ice conditions have reduced the amount of water available for storage. Cold Springs reservoir now holds 28,400 acre feet compared with 38,000 acre feet at this time last year. McKay reservoir has only 13,200 acre feet compared with 17,000 a.f. one year ago.

STREAMFLOW

The Walla Walla South Fork is forecast to flow 68,000 acre feet or 90 percent average (1943-57) for the April-September period. The Umatilla at Pendleton is forecast at 91 percent average or 170,000 acre feet in the same six months. Forecast for McKay Creek for the February-September period is 55,000 acre feet or 90 percent of the average.

Smaller streams such as Birch, Butter, Willow, Rhea and Rock Creeks will have slightly below average flows.

The remaining winter storms will have to produce at least average moisture or these forecasts will have to be lowered.

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Aneroid Lake No. 1	7480	1/27	72	27.1	19.2	24.4
Aneroid Lake No. 2	7000	1/27	60	22.4	13.6	19.2
Anthony Lake	7125	1/27	56	17.4	12.2	20.2*
Bald Mountain ^e (Ore.)	6700	1/31	70	23.1	18.0	- -
Barney Creek	5950	c				
Beaver Reservoir	5340	1/29	26	8.0	5.8	8.0
Blue Mountain Summit	5098	1/26	25	6.4	4.0	6.9
Bourne	5800	1/30	34	10.0	7.4	12.2*
County Line	4800	1/30	14	4.8	2.9	5.0*
Dooley Mountain	5430	1/25	23	5.7	3.4	6.6
Eilertson Meadows	5400	1/26	22	6.9	4.6	8.7*
Eldorado Pass	4600	1/29	6	1.1	0.0	- -
Gold Center	5340	1/30	28	7.8	5.9	9.5*
Goodrich Lake	6775	h				
Little Alps	6200	1/27	35	10.5	6.4	- -
Lucky Strike	5050	1/29	31	9.0	4.9	9.1*
Meacham	4300	1/26	20	6.3	2.8	7.1
Moss Spring	5850	1/29	53	17.4	9.2	17.1
Schneider Meadows	5400	1/26	69	22.7	15.3	21.6
Schoolmarm	4775	1/30	11	4.4	2.7	4.4*
Standley ^e	7400	1/24	59	22.4	17.5	- -
Taylor Green	5740	c				
Tipton	5100	1/26	26	7.2	5.2	8.4*
Tollgate	5070	1/26	45	16.8	8.8	19.2

WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook is for near adequate irrigation water supplies in Umatilla, Morrow and Gilliam counties in 1962. Forecasts indicate streamflow will be better than in any year since 1958.

SNOW COVER

Water content of the mountain snowpack is practically double that of last year at this date although it is 17 percent below the 1943-57 average. Low elevation snow is a favorable factor this year.

SOIL MOISTURE

Moisture in the top 4 feet of soil immediately under the snowpack is favorable to a good runoff from melting snow. Electronic stations indicate these soils are now recharged up to 74 percent of capacity.

RESERVOIR STORAGE

Excessive ice conditions have reduced the amount of water available for storage. Cold Springs reservoir now holds 28,400 acre feet compared with 38,000 acre feet at this time last year. McKay reservoir has only 13,200 acre feet compared with 17,000 a.f. one year ago.

STREAMFLOW

The Walla Walla South Fork is forecast to flow 68,000 acre feet or 90 percent average (1943-57) for the April-September period. The Umatilla at Pendleton is forecast at 91 percent average or 170,000 acre feet in the same six months. Forecast for McKay Creek for the February-September period is 55,000 acre feet or 90 percent of the average.

Smaller streams such as Birch, Butter, Willow, Rhea and Rock Creeks will have slightly below average flows.

The remaining winter storms will have to produce at least average moisture or these forecasts will have to be lowered.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek	Fair	Fair
Butter Creek	Fair	Fair
Dry Creek	Fair	Fair
Dugger Creek	Fair	Fair
Johnson Creek	Fair	Fair
McKay Creek	Average	Fair
Mill Creek	Fair	Fair
Mud Creek	Fair	Fair
Pine Creek	Fair	Fair
Rhea Creek	Fair	Fair
Rock Creek	Fair	Fair
Umatilla River (Cold Springs Res.)	Average	Fair
Umatilla River, Main	Fair	Fair
Umatilla River (McKay Res.)	Average	Fair
Walla Walla River, Little	Fair	Fair
Walla Walla River, Main	Fair	Fair
Walla Walla River, N. Fork	Fair	Fair
Walla Walla River, S. Fork	Fair	Fair
Willow Creek	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	28.4	38.0	28.4
McKay	73.8	13.2	17.0	33.7

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^c
NO.	NAME				
0225	McKay near Pilot Rock	55	Feb.-Sept.	61	90
		c	April-Sept.	31	
0200	Umatilla near Gibbon	54	Feb.-July	61	89
		c	April-July	31	
		87	April-Sept.	96	91
0210	Umatilla at Pendleton	170	April-Sept.	187	91
		165	April-July	182	91
0100	Walla Walla, South Fork near Milton	68	April-Sept.	76	90
		55	April-July	62	89

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
	NAME						
	ELEVATION						
Athena-Weston	1700	48	11.8	1-26-62	7.5	9.6	6.9
Battle Mountain Summit	4340	48	8.0	1-25-62	4.7	6.3	5.3
Emigrant Springs	3925	48	15.0	1-26-62	10.9	12.6	- -
Tollgate	5070	48	17.8	1-26-62	15.8	15.6	16.4

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Arbuckle Mountain	5400	1/24	24	6.7	4.9	8.5
Battle Mountain Summit	4340	1/25	12	2.6	T	- -
Emigrant Springs	3925	1/26	10	2.5	1.0	6.1
Lucky Strike	5050	1/29	31	9.0	4.9	9.1*
Meacham	4300	1/26	20	6.3	2.8	7.1
Tollgate	5070	1/26	45	16.8	8.8	19.2

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Nearest current data. (h) Partly estimated.

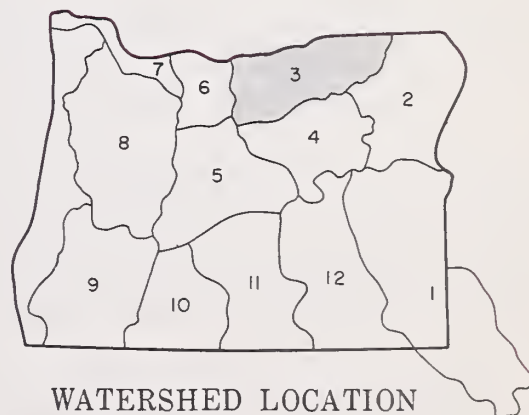
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ▼ Soil Moisture Station





WATER SUPPLY OUTLOOK UPPER JOHN DAY WATERSHEDS

OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

For the first time since 1958 it appears that streamflows in the Upper John Day Basin will come close to being average. The mountain snowpack is quite favorable but watershed soils under the snow are so dry that they will soak up some of the early snowmelt water.

SNOW COVER

Water content of the snowpack is 77 percent greater than last year at this date and is only 4 percent below the February 1st average.

SOIL MOISTURE

Moisture in the top 3 or 4 feet of soil - mantle under the snowpack is only 37 percent of capacity compared with 42 percent one year ago. These dry soils will definitely reduce the total water available for streamflow.

STREAMFLOW

Flow of the John Day at Service Creek* has been less than half normal (42 percent) in the October-January period. This is a reflection of the extremely dry watershed soils coupled with excessive cold temperatures preventing snowmelt.

Forecasted flow of the John Day at Prairie City is 60,000 acre feet or 102 percent of the 1943-57 average for the March-July period. The Middle Fork of the John Day at Ritter is forecast at 161,000 acre feet or 102 percent for the same 5 month period. The April-September forecast for Strawberry Creek near Prairie City is 8,300 acre feet or 91 percent of average.

Flows of smaller streams such as Indian, Pine, Beech and Long Creek will be somewhat below their usual amounts.

These streamflow forecasts assume that winter storms will continue to produce average amounts of moisture in the form of snow.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon.

expressed as "Poor", "Fair",
"Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.)

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.)

AVAILABLE SOIL MOISTURE

SNOW

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Nearest current data. (*) 1943-57 Adjusted average.



WATER SUPPLY OUTLOOK UPPER DESCHUTES, CROOKED WATERSHEDS OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

For the first time since 1958 streamflow in Deschutes, Jefferson and Crook counties will come close to being average. Accumulation of stored water supplies is generally ahead of last year, the mountain snowpack is near average and soils under the snow are wetter than last year.

SNOW COVER

Water content of the mountain snowpack is average on the Deschutes watersheds but is 97 percent greater than last year at this date. Similarly, on the Crooked watersheds, the snow is 12 percent greater than average and 2-1/2 times the amount accumulated by February 1st last year.

SOIL MOISTURE

Moisture in the top 3 to 4 feet of soils in the Marks Creek area is still 43 percent below capacity but is greater than last year.

RESERVOIR STORAGE

Ochoco reservoir has 8,500 acre feet in storage compared with 2,300 a.f. at this date last year. Prineville reservoir had 92,800 a.f. on February 1 and is now discharging 600 acre feet each day as a part of planned flood protection activity.

Stored water in Crane Prairie, Crescent Lake and Wickiup is greater than last year on February 1 in each case.

STREAMFLOW

Forecast of the inflow to Ochoco reservoir for the February-June period is 47,000 acre feet or 92 percent of the 15 year (1943-57) average. The February-July flow of Crooked River near Post is forecast at 190,000 a.f. or 92 percent of average.

Flow of Deschutes River at Benham Falls is forecast at 525,000 a.f. or 87 percent average for the April-September period. Forecast for the Little Deschutes near Lapine is 120,000 acre feet or 93 percent for the February-July period.

Squaw and Tumalo Creeks are expected to flow about 100 percent of their average for the April-September period.

These forecasts assume that remaining winter storms will bring at least average moisture contributions.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	Average
Bear Creek	Average	Fair
Beaver Creek	Average	Fair
Camp Creek	Average	Fair
Central Ore. Irrig. Dist.	Average	Average
Crooked River	Average	Fair
Deschutes River	Average	Fair
Hay - Trout Creeks	Average	Fair
Lone Pine Irrig. Dist.	Average	Average
Mill Creek	Average	Fair
North Unit Irrig. Dist.	Average	Average
Ochoco Creek	Average	Fair
Sisters Irrigation Dist.	Average	Fair
Snow Creek Irrig. Dist.	Average	Average
Squaw Creek Irrig. Dist.	Average	Average
Swalley Ditch	Average	Average
Tumalo Project	Average	Average
Walker Basin Irrig. Dist.	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	36.9	31.8	41.2
Crescent Lake	117.2	39.5	36.4	46.1
Ochoco	47.5	8.5	2.3	25.0
Prineville	153.0	92.8	- -	- -
Wickiup	182.0	144.2	130.0	122.4

Note: The U. S. Bureau of Reclamation indicates that dead storage in the amount of 5360 acre feet may be included in the current storage figure for Crescent Lake.

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

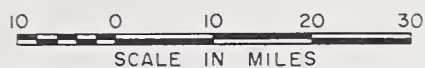
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
0535	Crane Prairie Reservoir total Inflow	133	April-Sept.	143	93
0600	Crescent at Crescent Lake ^d	22	March-July	28	80
0795	Crooked near Post	190	Feb.-July	207	92
0645	Deschutes at Benham Falls ^d	525	April-Sept.	602	87
		352	April-July	404	87
0500	Deschutes below Snow Creek	70	April-Sept.	74	95
0630	Deschutes, Little near Lapine ^d	120	Feb.-July	129	93
0848	Ochoco Reservoir net Inflow	47	Feb.-June	51	92
0555	Odell near Crescent	30	April-Sept.	34	88
0750	Squaw near Sisters	56	April-Sept.	55	102
0730	Tumalo near Bend ^d	54	April-Sept.	55	98

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Derr	5670	24	6.0	c			
Marks Creek	4540	36	8.3	1-26-62	4.7	3.5	2.2
Snow Mountain	6300	48	10.4	c			

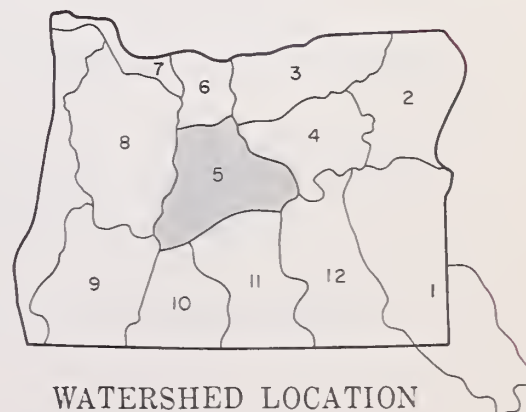
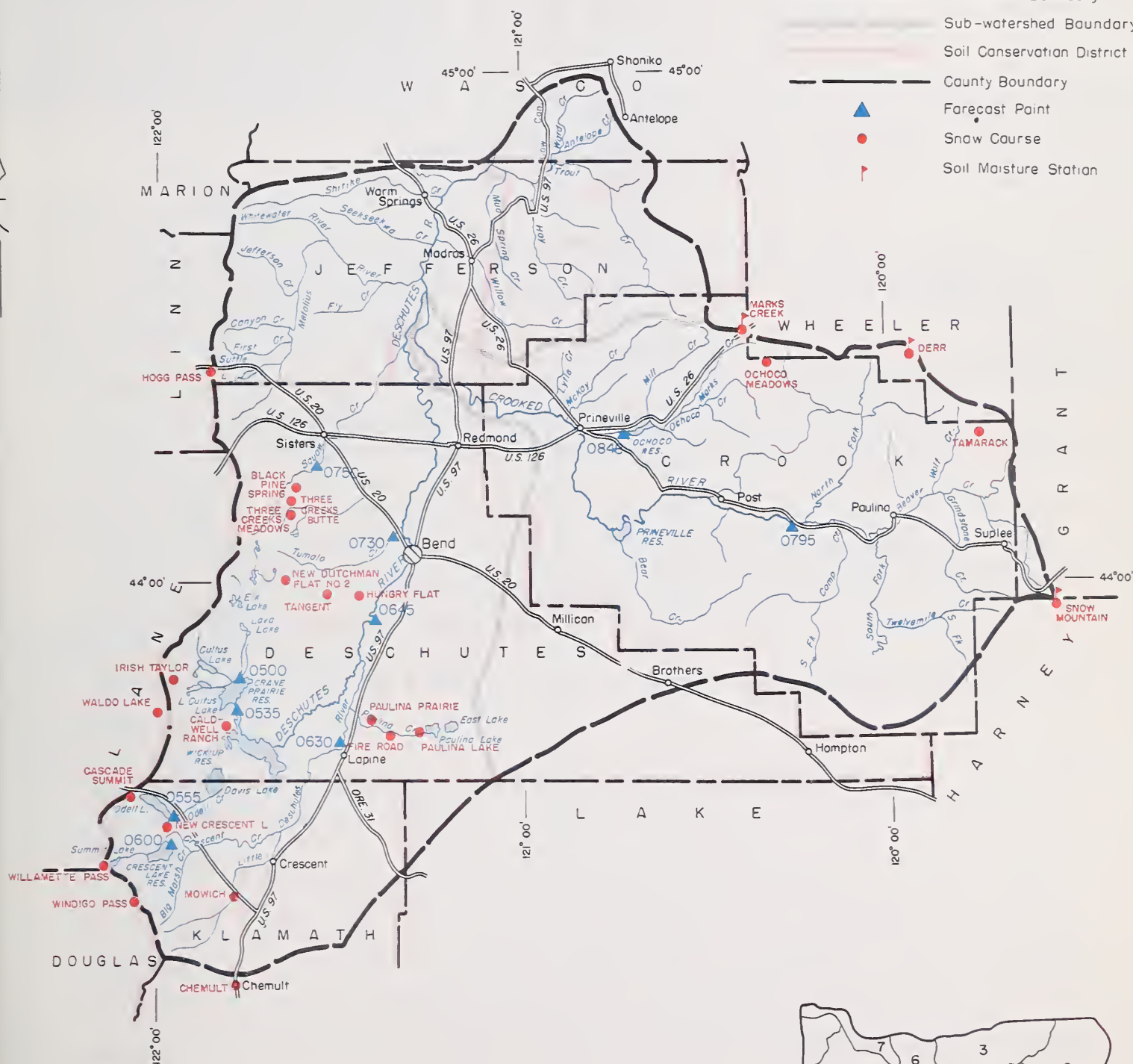
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average.

UPPER DESCHUTES, CROOKED WATERSHEDS



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ▼ Soil Moisture Station



Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Black Pine Spring	4600	1/30	10	3.8	0.0	5.0*
Caldwell Ranch	4400	1/24	35	10.8	4.5	9.9*
Cascade Summit	4880	1/30	60	21.9	9.2	24.4
Chemult	4760	1/28	24	7.4	4.9	10.0
Derr	5670	1/26	25	8.2	3.8	7.4
Fire Road	5050	1/23	32	8.2	3.9	- -
Hogg Pass	4755	1/29	70	27.8	12.3	32.3
Hungry Flat	4400	1/29	16	6.6	T	7.3*
Irish-Taylor	5500	1/24	78	28.2	14.7	28.6*
Marks Creek	4540	1/26	17	4.8	0.1	4.2
Mowich	4700	1/26	12	3.8	T	- -
New Crescent Lake	4800	1/25	35	10.2	6.4	13.3*
New Dutchman Flat No. 2	6400	1/29	90	36.0	24.4	35.9*
Ochoco Meadows	5200	1/30	29	9.1	4.6	8.1
Paulina Lake	6330	1/23	50	17.4	10.7	- -
Paulina Prairie	4285	1/23	10	1.8	0.0	- -
Snow Mountain	6300	c				
Tamarack	4800	1/29	19	4.6	- -	- -
Tangent	5400	1/29	48	16.1	12.9	18.5*
Three Creeks Butte	5200	1/30	30	11.4	3.5	- -
Three Creeks Meadows	5600	1/30	45	16.4	6.9	14.7*
Waldo Lake	5500	1/24	65	23.5	10.0	22.6*
Willamette Pass	5600	1/25	84	30.1	15.4	29.3*
Windigo Pass	5800	1/26	90	32.0	19.5	30.4*

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1962 water supply outlook for the Hood River-Wasco County area has been dimmed slightly by a cold, dry January, causing below average snow accumulation on the watersheds.

SNOW COVER

Mountain snow cover now averages two-thirds of the 1943-57 average for February 1, and is almost double what was on the ground at this time last year. Snow remains at low elevations this year, which will improve flows for small streams in this area.

SOIL MOISTURE

Watershed soils are fairly well wetted. Soils at lower elevations have been "primed" much better than the soils under the high snowpack and these higher soils will still soak up some snowmelt water.

RESERVOIR STORAGE

Storage in Clear Lake is 4,100 acre feet with no reports from other reservoirs in the area.

STREAMFLOW

January flow of Hood River* was 89 percent of the 1943-57 average, reducing the average flow from October 1 to date to 92 percent of this same average.

Streamflow forecasts for the Hood River near Hood River are 87 percent of the 1943-57 average or 307,000 acre feet for the April-September period. The West Fork of Hood near Dee is forecast at 85 percent or 148,000 acre feet for the same period. White River below Tygh Valley is expected to flow 150,000 acre feet, 84 percent average, for the April-September irrigation season.

Low elevation snow this year should improve the flow of Mosier, Mill and Mile Creeks.

The flow of White River tributaries, Rock, Gate, Threemile, Badger and Tygh Creeks is expected to be better than last year but still below average.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch	Fair	Fair
Badger Creek	Fair	Fair
Dee Irrigation Dist.	Fair	Fair
East Fork Irrig. Dist.	Fair	Fair
Farmers Irrig. Dist.	Fair	Fair
Hood River Irrig. Dist.	Fair	Fair
Juniper Flat	Average	Fair
Middle Fork Irrig. Dist.	Fair	Fair
Mile Creeks	Fair	Fair
Mill Creek	Fair	Fair
Mount Hood Irrig. Dist.	Fair	Fair
Rock-Gate-Threemile Crs.	Fair	Fair
Tygh Creek	Fair	Fair
White River	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	- -	4.1	- -	- -

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^c
NO.	NAME				
1210	Hood near Hood River ^d	307	April-Sept.	365	84
		260	April-July	311	84
1185	Hood, West Fork near Dee	148	April-Sept.	174	85
		125	April-July	151	83
1015	White below Tygh Valley	150	April-Sept.	178	84
		132	April-July	161	82

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Brooks Meadows	4300	c				
Clear Lake	3500	1/30	7	2.6	T	8.8*
Clear Lake Experimental	3500	1/30	20	7.6	3.1	- -
Cooper Spur	3490	1/30	10	5.0	0.0	- -
Greenpoint Reservoir	3400	1/22	21	5.8	0.4	14.3*
Knebal Springs	3850	c				
Parkdale	1770	1/30	0	0.0	0.0	- -
Phlox Point	5600	1/29	79	37.2	24.6	43.5
Red Hill	4400	1/28	45	21.0	8.6	34.7*
Still Creek	3700	1/29	27	11.8	5.5	19.3
Tilly Jane	6000	1/21	63	24.0	16.9	31.5*
Ulrich Ranch Junction	3350	c				
Upper Valley	2530	1/30	0	0.0	0.0	- -

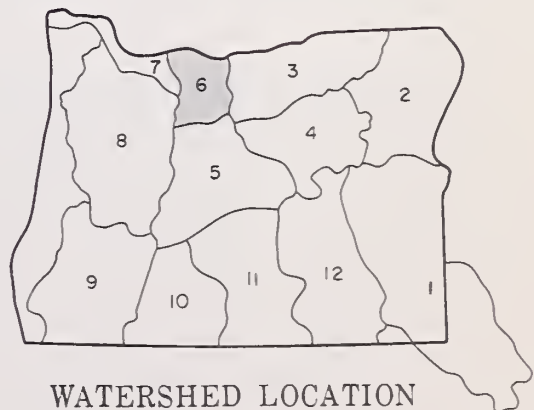
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average.

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course





WATER SUPPLY OUTLOOK LOWER COLUMBIA WATERSHEDS

OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The water supply outlook for spring and summer flow of the Columbia River near The Dalles has dropped to slightly below normal as a result of light snowfall during January. The river is forecast to flow 97.5 million acre feet, which is 92 percent of the 15 year normal (1943-57) for the April-September period.

SNOW COVER

Key snow courses, measured near February 1 in the United States and Canada indicate well below normal snowfall throughout the month of January. The northern portion of the Columbia Basin in Canada has a snowpack near normal, but the remainder of the basin in Washington, Oregon, Montana, Western Wyoming and Idaho is close to or well below average. The snow line is variable for this time of the year with light or no snow on the south slopes even at high elevations.

SOIL MOISTURE

Soil moisture conditions in the northern portion of Columbia Basin are poorer than they have been for many years. Base flow figures which usually reflect soil moisture status also indicate dry conditions on most northern tributaries. Base flow on the Kootenai River, however, is close to normal.

The number of soil moisture measurements made by means of electrodes in the soil beneath the snow has been increased significantly but records are short. However, experience indicates that soil moisture conditions in general are much drier than last year for most tributaries in the Columbia Basin and drier than normal.

STREAMFLOW

Flow of the Columbia River near The Dalles* has been below normal and steadily declining since October 1st.

<u>Month</u>	<u>Percent of Normal Discharge (1943-57)</u>
October	91 adjusted for storage
November	80 " " "
December	73 " " "
January	82 " " "

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon.

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
1057	Columbia at The Dalles	97,500 66,000	April-Sept. April-June	106,100 72,000	92 92

HISTORICAL DATA (Columbia River at The Dalles)

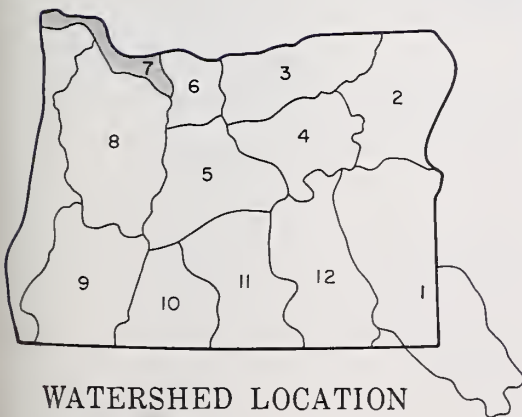
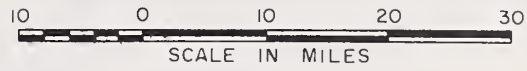
YEAR	STREAMFLOW ^c (1,000 A.F.)			PEAK ^e (1,000 c.f.s.)	DATE
	APR.— SEPT.	APR.— JUNE	MAY— JUNE		
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)^f

VANCOUVER ^g GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s.)	DRAINAGE DISTRICT PUMPHOUSE						
		SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES						
		118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	940	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	890	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	840	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	790	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	750	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	700	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	660	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	630	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	590	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	560	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20	530	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	510	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	480	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	450	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	430	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Observed flow corrected for storage in F.D.R., Kootenai, Pend Oreille, Flathead, Hungry Horse, Lake Chelan, Coeur d'Alene and Grand Coulee Equalizer. (d) Not scheduled. (e) Observed peak. (f) Based on Corps of Engineers automatic water stage recorder data. (g) Vancouver Weather Bureau gage zero is 1.82' above M.S.L. All other readings are in feet above M.S.L.

LOWER COLUMBIA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- (50) River Miles
- Snow Course



"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK WILLAMETTE WATERSHEDS OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1962 spring and summer water supplies in the Willamette Valley is the best since 1958. Snow cover is fair and watershed soils have been partially "primed".

SNOW COVER

Water content of the snowpack on this watershed is nearly three times as much as last year at this time although still 26 percent below the 1943-57 average for February 1.

Snow did not accumulate at an average rate during January, dropping to 76 percent of average for February 1 from 120 percent of average one month ago.

SOIL MOISTURE

Watershed soils under the snowpack have been only partially primed by fall rains and will soak up some snowmelt water at higher elevations.

RESERVOIR STORAGE

Six multi-purpose reservoirs on Willamette tributaries are being operated according to a pre-arranged flood control plan by the U. S. Corps of Army Engineers. These reservoirs will be filled as the runoff progresses this spring.

STREAMFLOW

Streamflow during January was only two-thirds of the 1943-57 average on the Middle Fork of the Willamette*. This stream has flowed only 78 percent of average for the October 1 - February 1 period.

Forecasts of streamflow for the April-September irrigation season range from 82 percent of average for the Clackamas at Big Bottom to 100 percent for the Middle Fork of the Willamette. The Willamette at Salem is expected to flow 91 percent of average for the same period.

Discharge of the Molalla, Pudding, Calapooya and smaller streams is expected to be nearer average than for the last several years.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon.

Report prepared by

W.T. FROST AND BOB L. WHALEY

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya	Average	Fair
Clackamas	Average	Fair
McKenzie	Average	Average
Molalla	Average	Fair
Santiam, North	Average	Fair
Santiam, South	Average	Fair
Willamette, Coast Fork	Average	Fair
Willamette, Middle Fork	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.8*	0.3	1.4	0.5
Detroit	299.9*	3.4	16.9	27.9
Dorena	70.5*	1.9	2.5	2.6
Fern Ridge	94.2*	0.9	8.6	19.3
Hills Creek Res.	249.0*	2.7	- -	- -
Lookout Point	337.2*	0.0	11.7	- -
*Multiple purpose reservoir--space reserved primarily for flood runoff.				

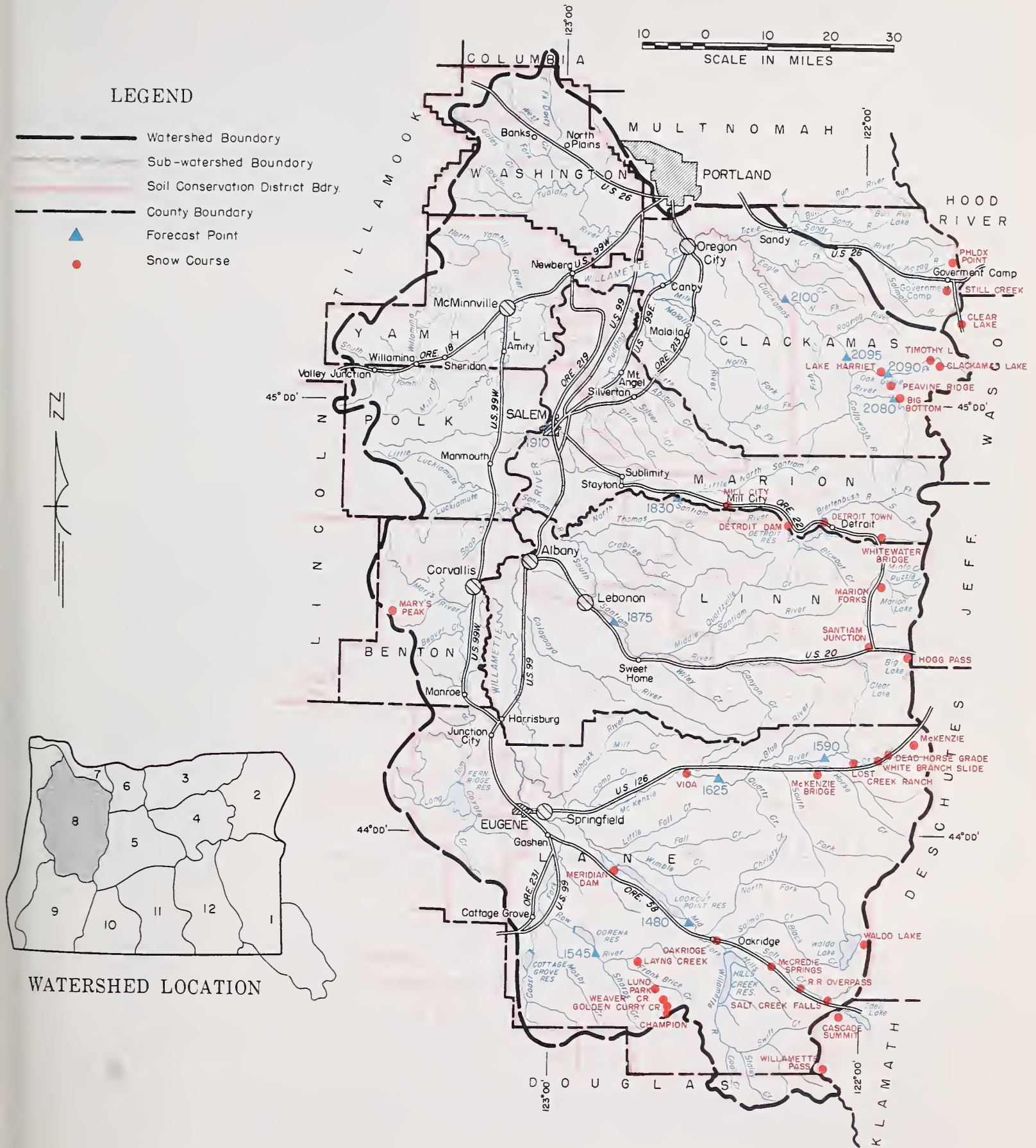
STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^c
NO.	NAME				
2080	Clackamas at Big Bottom	151	April-Sept.	184	82
		121	April-July	150	81
2100	Clackamas at Estacada	750	April-Sept.	879	85
		681	April-July	763	89
2095	Clackamas above Three Lynx	565	April-Sept.	674	84
		476	April-July	578	82
1590	McKenzie at McKenzie Bridge	621	April-Sept.	640	97
		476	April-July	488	98
1625	McKenzie near Vida	1311	April-Sept.	1362	96
		1082	April-July	1120	97
2090	Oak Grove Fork above Power Intake	173	April-Sept.	198	87
		134	April-July	156	86
1545	Row near Dorena	99	April-Sept.	114	87
		94	April-July	109	86
1830	Santiam, North at Mehama ^d	860	April-Sept.	968	89
		766	April-July	866	88
1875	Santiam, South at Waterloo	594	April-Sept.	652	91
		561	April-July	616	91
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	909	April-Sept.	909	100
		799	April-July	804	99
1910	Willamette at Salem ^d	4972	April-Sept.	5461	91
		4434	April-July	4942	90

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed.

(*) 1943-57 Adjusted average.

WILLAMETTE WATERSHEDS



Willamette Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Big Bottom	2118	1/28	2	0.8	0.0	5.9*
Cascade Summit	4880	1/30	60	21.9	9.2	24.4
Champion	4500	1/31	37	14.4	0.0	20.1
Clackamas Lake	3400	c				
Clear Lake	3500	1/30	7	2.6	T	8.8*
Clear Lake Experimental	3500	1/30	20	7.6	3.1	- -
Dead Horse Grade	3800	1/30	33	13.4	0.0	16.0*
Detroit Town	1610	1/29	0	0.0	0.0	3.1*
Detroit Dam	1580	1/29	0	0.0	0.0	1.2*
Golden Curry Creek	3136	1/31	5	1.4	0.0	6.8*
Hogg Pass	4755	1/29	70	27.8	12.3	32.3
Lake Harriet	2045	1/28	T	T	0.0	3.8*
Layng Creek	1200	1/31	0	0.0	0.0	T*
Lost Creek Ranch	1956	1/30	T	T	0.0	5.3*
Lund Park	1740	1/31	4	1.2	0.0	1.9*
Marion Forks	2730	1/29	21	8.3	0.0	11.7
Marys Peak	3620	1/28	3	1.0	0.0	8.7*
McCredie Springs	2120	1/30	0	0.0	0.0	1.6*
McKenzie	4800	1/30	78	33.3	12.1	33.4*
McKenzie Bridge	1372	1/30	0	0.0	0.0	2.1*
Meridian Dam	750	1/30	0	0.0	0.0	0.0*
Mill City	826	1/29	0	0.0	0.0	T*
Oakridge	1310	1/30	0	0.0	0.0	T*
Peavine Ridge	3500	1/29	23	9.0	3.7	13.9
Phlox Point	5600	1/29	79	37.2	24.6	43.5
Railroad Overpass	2750	1/30	0	0.0	0.0	4.2*
Salt Creek Falls	4000	1/30	35	13.0	0.0	13.1*
Santiam Junction	3990	1/29	40	16.7	4.2	19.7
Still Creek	3700	1/29	27	11.8	5.5	19.3
Timothy Lake	3295	1/29	21	8.1	3.9	- -
Vida	800	1/30	0	0.0	0.0	T*
Waldo Lake	5500	1/24	65	23.5	10.0	22.6*
Weaver Creek	2440	1/31	3	1.2	0.0	2.1*
White Branch Slide	2800	1/30	T	T	0.0	6.8*
Whitewater Bridge	2175	1/29	7	2.5	0.0	6.3*
Willamette Pass	5600	1/25	84	30.1	15.4	29.3*

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK ROGUE, UMPQUA, WATERSHEDS OREGON

as of
FEBRUARY 1, 1962



U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

For the first time since 1958, streamflow in the Rogue-Umpqua Basin is expected to approach average during the 1962 irrigation season. The snowpack is favorable, soil moisture is good and stored water supplies are promising.

SNOW COVER

Water content of the mountain snowpack on February 1st is 11 percent less than the 15 year average (1943-57) but is double that of last year on this date.

SOIL MOISTURE

Moisture in the top 3 to 4 feet of the upper watershed soils lying under the snowpack appears to be plentiful and will favor the snowmelt runoff to come later.

RESERVOIR STORAGE

Fish Lake and Fourmile Lake reservoirs together hold 7,700 acre feet of water compared with 6,400 acre feet last year on February 1st.

Howard Prairie and Emigrant reservoirs contain a total of 39,600 acre feet compared with 19,300 a year ago. In addition, Hyatt Prairie has better than 7,000 acre feet in readiness.

STREAMFLOW

Little Butte, North Fork at Fish Lake is forecast to flow nearly 17,000 acre feet during the April-September period. Fourmile Lake should increase its storage by 7,800 acre feet during the February-September period.

Little Butte, South Fork, near Lake Creek is forecast to flow 43,000 a.f. during the April-September period or 102 percent of the average. At the same time, Hyatt Lake should increase its storage by 5,200 a.f. or 84 percent of the average.

The Applegate River near Copper and the Illinois River at Kerby are forecast to flow 80 and 95 percent of average, respectively, during the irrigation season.

Flow of the Rogue at Raygold is forecast at 98 percent average for the April-September period. There will be no need for canal rotation in the Grants Pass Irrigation District this year.

Flow of the North Umpqua below Lemolo is forecast at 162,000 a.f. or 87 percent of average for the April-September period.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Fair	Fair
Applegate River, Big	Fair	Fair
Applegate River, Little	Fair	Fair
Ashland Creek	Fair	Fair
Butte Creek, Little	Average	Fair
Butte Creek, Big	Average	Fair
Cow Creek	Fair	Fair
Deer Creek	Fair	Fair
Elk Creek	Average	Fair
Emigrant Cr. (above Res.)	Fair	Fair
Evans Creek	Fair	Fair
Gold Hill Irrigation Dist.	Average	Average
Grants Pass Irrig. Dist.	Average	Average
Grave Creek	Fair	Fair
Illinois River, East Fork	Average	Fair
Illinois River, West Fork	Average	Fair
Jump-off-Joe Creek	Fair	Fair
Neil Creek	Fair	Fair
Red Blanket Creek	Average	Fair
Rogue River	Average	Average
Sucker Creek	Fair	Fair
Table Rock Irrig. Dist.	Average	Average
Thompson Creek	Fair	Fair
Wagner Creek	Fair	Fair
Williams Creek	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

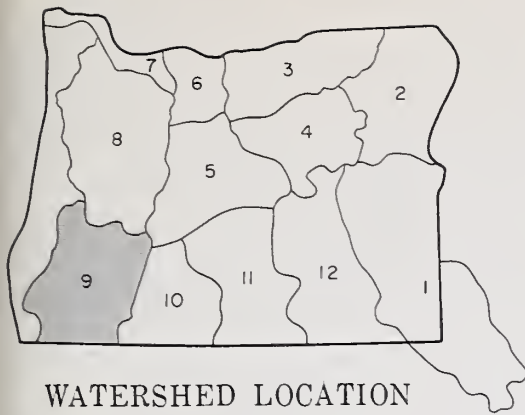
RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	20.5	9.0	5.2
Fish Lake	7.8	4.2	3.4	5.0
Fourmile Lake	16.1	3.5	3.0	8.3
Howard Prairie	60.0	19.1	10.3	- -
Hyatt Prairie	16.1	7.2	1.6	6.1

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

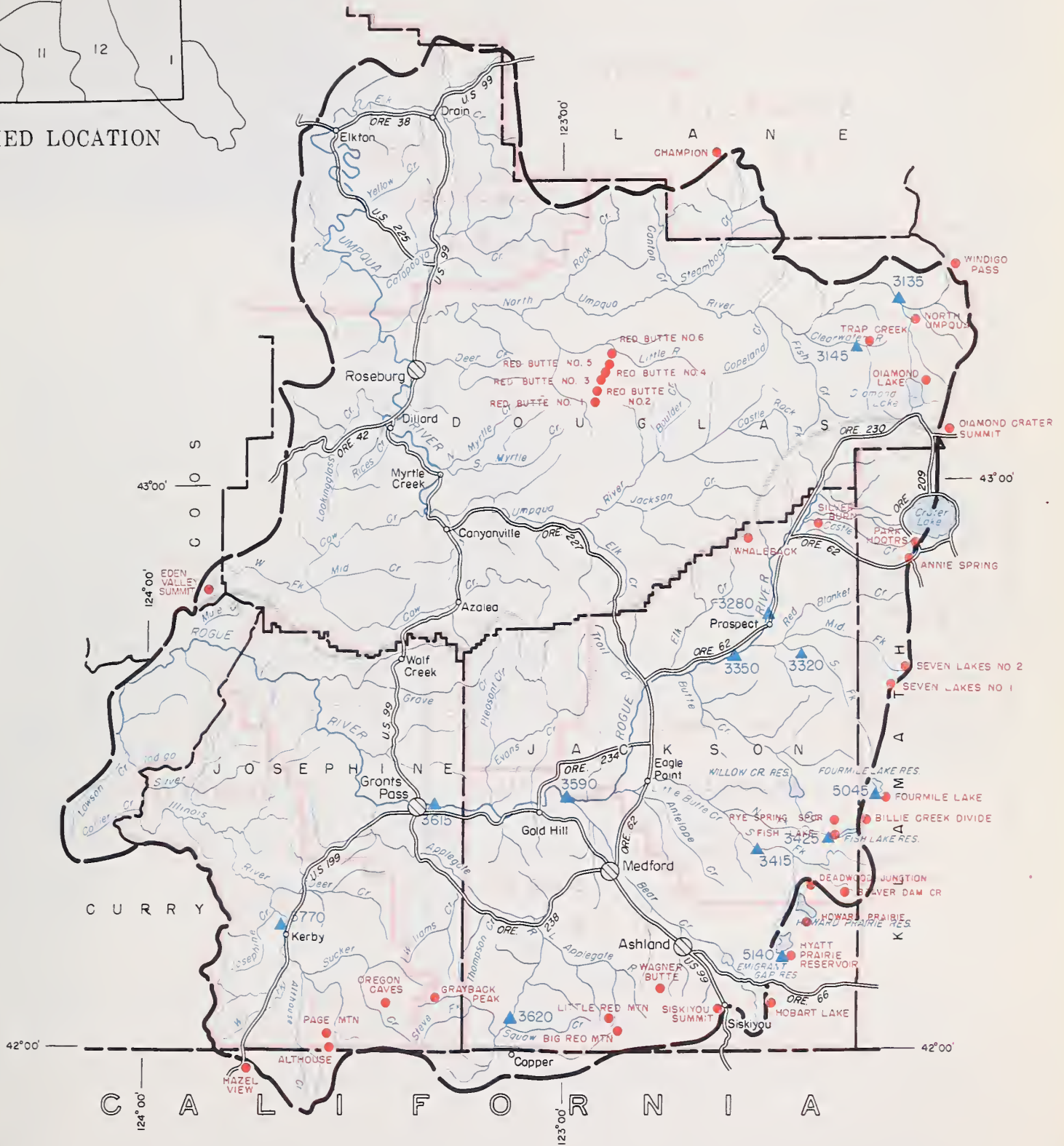
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3620	Applegate near Copper	105	April-Sept.	131	80
3145	Clearwater above Trap Creek ^d	60	April-Sept.	73	82
5045	Fourmile Lake net Inflow ^d	7.8	Feb.-Sept.	8.0	98
5140	Hyatt Reservoir net Inflow ^d	5.2	April-Sept.	6.2	84
3770	Illinois River at Kerby ^d	298	March-July	314	95
3425	Little Butte, N. Fk. at Fish Lake nr. Lake Cr. ^d	16.9	April-Sept.	16.9	100
3415	Little Butte, S. Fk. near Lake Creek	43	April-July	42	102
Note: Minimum flow will drop to 100 c.f.s. by June 10th.					
3280	Rogue above Prospect	343	April-Sept.	351	98
		286	April-July	293	98
3320	Rogue, South Fork near Prospect ^d	80	April-Sept.	83	96
		68	April-July	71	96
3350	Rogue below South Fork	730	April-Sept.	749	97
		590	April-July	608	97
3590	Rogue at Raygold near Central Point	980	April-Sept.	1004	98
		820	April-July	842	97
3615	Rogue at Grants Pass	950	April-Sept.	974	98
3135	Umpqua, No. blw. Lemolo Res. nr. Toketee Falls ^d	162	April-Sept.	186	87

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not Surveyed. (h) Construction. (i) 7 of 18 sampling points. (j) Partly estimated. (*) 1943-57 Adjusted average.

ROGUE, UMPQUA WATERSHEDS



10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course

Rogue, Umpqua Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Althouse	4530	1/29	4	1.1	0.0	5.1*
Annie Spring	6018	1/29	72	25.2	17.9	30.9
Beaver Dam Creek	5100	1/30	30	8.2	5.4	- -
Big Red Mountain	6500	1/29	41	14.5	12.1	20.5*
Billie Creek Divide	5300	1/30	48	16.2	9.2	17.6*
Champion	4500	1/31	37	14.4	0.0	20.1
Cold Springs Camp	6100	1/29	73	25.7	16.2	- -
Deadwood Junction	4600	1/30	27	7.6	T	- -
Diamond-Crater Summit	5800	1/24	83	28.0	14.1	- -
Diamond Lake	5315	1/24	53	16.9	8.5	18.3
Eden Valley Summit	2390	2/1	5	2.0	- -	- -
Fish Lake	4865	1/30	34	11.6	2.0	10.3*
Fourmile Lake	6000	1/30	43	17.0	15.0	20.3*
Grayback Peak	6000	1/30	25	9.3	7.7	17.1*
Hazel View	2500	1/29	0	0.0	0.0	- -
Hobart Lake	5010	g				
Howard Prairie	4500	1/30	29	8.0	3.3	- -
Hyatt Prairie Reservoir	4900	1/29	24	6.2	T	7.7*
Little Red Mountain	6500	1/28	37	12.9	- -	15.1*
North Umpqua	4215	1/29	34	11.8	3.6	12.0*
Page Mountain	4045	1/29	3	1.0	0.0	- -
Park Headquarters	6450	1/29	94	37.6	24.8	39.0*
Red Butte #1	4560	1/29	24	8.4	0.0	- -
Red Butte #2	4000	1/29	11	4.4	0.0	- -
Red Butte #3	3500	1/29	8	3.6	0.0	- -
Red Butte #4	3000	1/29	4	1.8	0.0	- -
Red Butte #5	2500	1/29	0	0.0	0.0	- -
Red Butte #6	2000	1/29	0	0.0	0.0	- -
Rye Spring Spur	5000	1/30	31	10.0	T	- -
Seven Lakes #1	6800	1/25	106	42.0	24.8	37.7*
Seven Lakes #2	6200	1/26	90	31.3	17.2	28.4*
Silver Burn	3720	1/28	24	8.0	2.2	10.9
Siskiyou Summit	4630	1/27	12	3.0	0.0	7.4
South Fork Canal	3500	1/28	10	2.4	0.0	3.8
Trap Creek	3800	1/29	28	11.3	2.4	11.5*
Wagner Butte	6900	g				
Whaleback	5140	1/29	59	21.9	12.5	26.0*
Windigo Pass	5800	1/26	90	32.0	19.5	30.4*

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

For the first time since 1958 streamflow in the Klamath Basin is expected to approach average during the 1962 irrigation season. The snowpack is right up to average but soils under the snow are very dry and stored water supplies are scanty.

SNOW COVER

Water content of the mountain snowpack is 80 percent greater than last year at this date but is average for February 1st.

SOIL MOISTURE

This good "snow crop" lies on watershed soils that are unusually dry. So dry that they will soak up a substantial amount of snowmelt water as next spring's runoff begins.

RESERVOIR STORAGE

Stored water supplies are exceptionally low. Upper Klamath Lake holds 265,000 acre feet compared to 348,000 a.f. as an average for February 1st. Clear Lake has 56,400 a.f. compared with 106,700 acre feet last year and 208,800 a.f. for an average. Similarly, Gerber has only 1,800 acre feet compared with 4,500 a.f. at this time last year.

STREAMFLOW

Forecasts of inflow to Gerber and Clear Lake in the February-June period are 45,000 and 90,000 acre feet respectively. Although these expected flows are only 85 percent of the 1943-57 average, the U. S. Bureau of Reclamation feels they will provide satisfactory water supplies if the forecasted runoff is received.

Inflow to Upper Klamath Lake is forecast at 978,000 acre feet or 102 percent of average for the February-September period. Flows of the Williamson and Sprague Rivers are forecast at 105 and 100 percent of average, respectively, for the same 8 months period.

Remaining winter storms must produce at least average moisture if these forecasted flows are to be realized.

Report prepared by

W. T. FROST AND BOB L. AHLEY

U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley	Average	Average
Lost River (Clear Lake)	Average	Average
Lost River (Gerber)	Average	Average
Lost River (Willow Res.)	Average	Average
Sprague River	Average	Average
Upper Klamath Lake	Average	Average
Williamson River	Average	Average

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	56.4	106.7	208.8
Gerber	94.0	1.8	4.5	34.7
Upper Klamath Lake	584.0	264.6	308.5	348.5

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

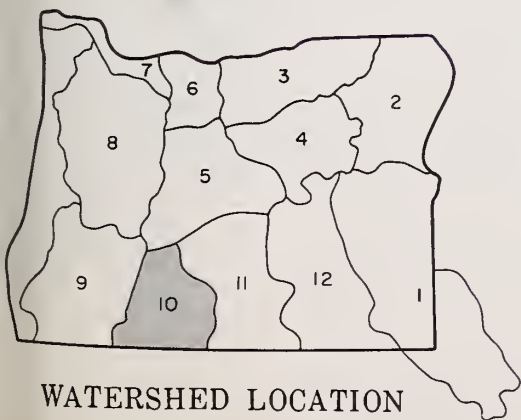
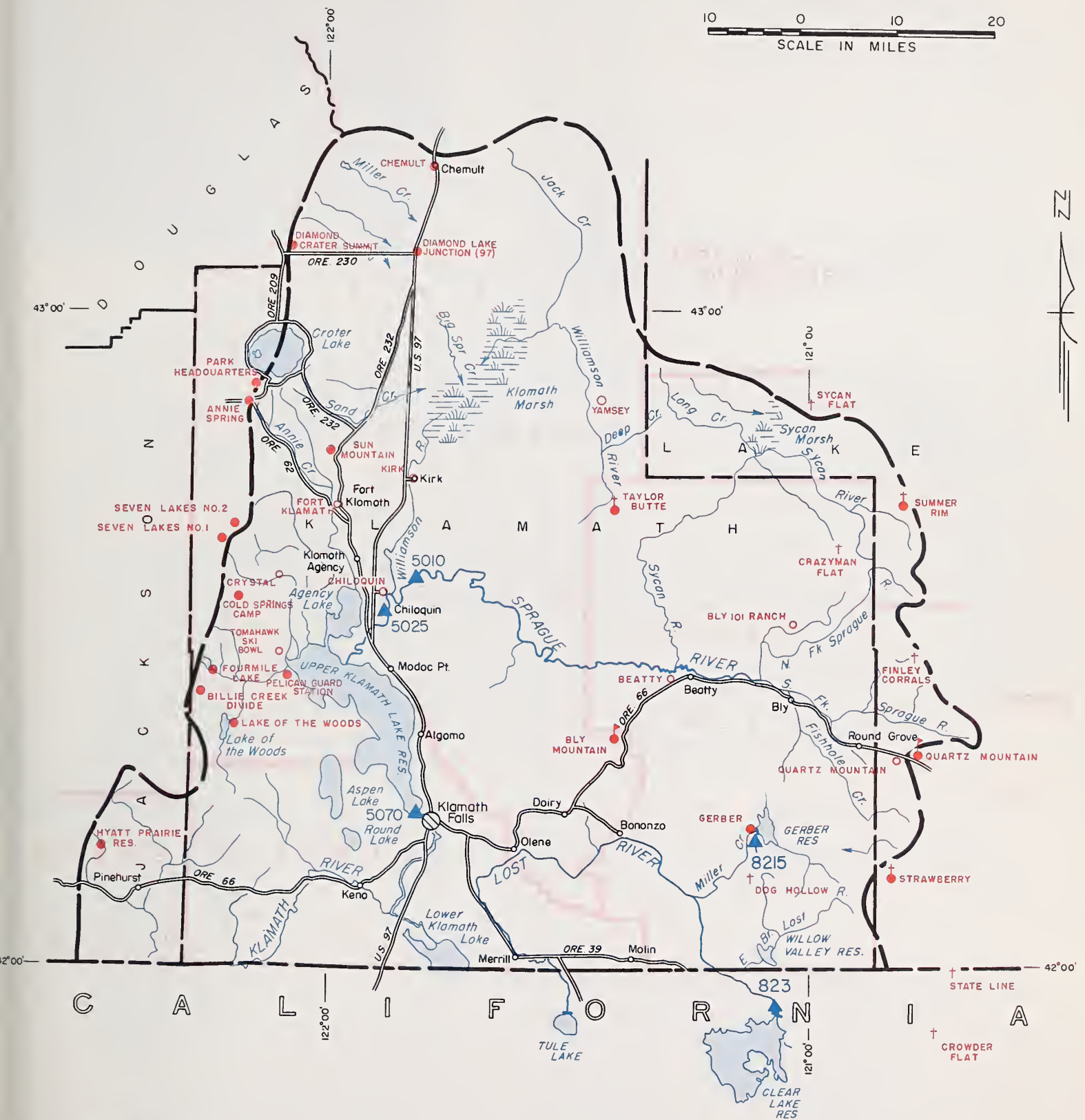
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
823	Clear Lake Reservoir Inflow ^g	90	Feb.-June	106	85
8215	Gerber Reservoir Inflow ^g	45	Feb.-June	51	88
5010	Sprague near Chiloquin	390	Feb.-Sept.	390	100
5070	Upper Klamath Lake net Inflow ^g	978	Feb.-Sept.	960	102
5025	Williamson below Sprague River ^d	689	Feb.-Sept.	657	105

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Bly Mountain	5090	42	7.4	1-29-62	2.1	3.4	--
Quartz Mountain	5320	48	10.7	1-29-62	1.1	0.8	--

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) From COPCO or USBR records of inflow. (h) Flashboards increase capacity to 513.0 (i) Water content partly estimated. (*) 1943-57 Adjusted average.

KLAMATH WATERSHEDS



LEGEND

- Watershed Boundary
- - - Sub-watershed Boundary
- - - Soil Conservation District Bdry.
- - - County Boundary
- ▲ Forecast Point
- Snow Course
- † Aerial Snow Depth Gage
- COPCO Snow Station
- ▶ Soil Moisture Station

Klamath Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Annie Spring	6018	1/29	72	25.2	17.9	30.9
Beatty (PP&L)	4300	f				
Billie Creek Divide	5300	1/30	48	16.2	9.2	17.6*
Bly Mountain	5090	1/29	27	7.6	3.6	- -
Bly 101 Ranch (PP&L)	4800	f				
Chemult	4760	1/28	24	7.4	4.9	10.0
Chiloquin (PP&L)	4187	f				
Cold Springs Camp	6100	1/29	73	25.7	16.2	- -
Crazyman Flat ^e	6100	1/24	30	8.4	4.7	- -
Crowder Flat ^e	5200	1/24	20	5.6	0.0	3.3*
Crystal (PP&L)	4200	f				
Diamond-Crater Summit	5800	1/24	83	28.0	14.1	- -
Diamond Lake Junction (97)	4600	1/24	18	4.4	2.9	- -
Dog Hollow ^e	4900	1/24	6	1.7	0.0	- -
Finley Corrals ^e	6000	1/24	45	12.6	9.4	- -
Fort Klamath (PP&L)	4150	f				
Gerber	4850	1/31	11	3.4	0.0	2.6*
Hyatt Prairie Reservoir	4900	1/29	24	6.2	T	7.7*
Kirk (PP&L)	4533	f				
Lake of the Woods	4960	1/28	31	12.8	5.9	9.6
Park Headquarters	6450	1/29	94	37.6	24.8	39.0*
Pelican Guard Station	4150	1/30	14	3.9	T	- -
Quartz Mountain	5320	1/29	22	6.5	2.8	5.8
Quartz Mountain (PP&L)	5504	1/29	24	7.0	2.4	5.8*
Seven Lakes #1	6800	1/25	106	42.0	24.8	37.7*
Seven Lakes #2	6200	1/26	90	31.3	17.2	28.4*
State Line ^e	5750	1/24	36	10.1	3.1	- -
Strawberry	5600	1/30	29	8.0	3.1	7.6*
Summer Rim	7200	1/24	32	9.0	10.5	- -
Sun Mountain	5350	1/26	50	14.9	11.0	20.2
Sycan Flat ^e	5500	1/24	32	9.0	3.9	- -
Taylor Butte	5100	1/23	22	5.7	2.5	4.9*
Tomahawk Ski Bowl (PP&L)	4200	f				
Yamsey (PP&L)	4600	f				

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK LAKE COUNTY, GOOSE LAKE WATERSHEDS OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for streamflow in Lake County next spring and summer is the best since 1959 but stored water is at a record low. Soils underlying the snowpack are still relatively dry and will soak up some snowmelt water which might have gone into the streams.

SNOW COVER

Water content of the mountain snowpack increased normally in spite of the excessively cold and dry January. Present water content of snow is double that of last year and 15 percent greater than the 15 year average (1943-57) for this date.

SOIL MOISTURE

However, the snowpack lies on relatively dry watershed soils and will lose some snowmelt water to recharge the soils. An electronic soil moisture station at Quartz Mountain Summit indicates soils there are only wet up to 10 percent of capacity.

RESERVOIR STORAGE

Stored water in Cottonwood and Drew reservoirs now totals about 900 acre feet compared with 8,800 acre feet a year ago and an average storage of 37,800 acre feet.

STREAMFLOW

Inflow to Drews reservoir during March-July is forecast at 32,000 acre feet or 68 percent of the 1943-57 average. Forecasts of March-June streamflow in other streams is estimated as follows:

Chewaucan River near Paisley	95,000 a.f.	103 percent
Deep Creek above Adel	81,000 a.f.	98 "
Honey Creek near Plush	16,700 a.f.	87 "
Twentymile Creek near Adel	24,000 a.f.	86 "

Remaining winter storms must produce at least average moisture supplies to insure a near adequate irrigation season.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River	Average	Fair
Crooked Creek	Fair	Fair
Deep Creek	Average	Fair
Dry Creek	Fair	Poor
East Side Goose Lake	Fair	Poor
Guano Lake	Fair	Fair
Honey Creek	Average	Fair
Lakeview Water Users Assn.	Fair	Fair
Rock Creek (Hart Mtn.)	Fair	Poor
Silver - Buck Creeks.	Average	Fair
Summer Lake	Average	Fair
Thomas Creek	Average	Fair
Twentymile Creek	Average	Fair
Warner Lakes	Average	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood	4.1	0.1	0.5	0.3
Drew	63.0	0.8	8.3	37.5

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3840	Chewaucan near Paisley	95	March-June	92	103
		c	April-June	82	
3715	Deep above Adel	81	March-June	83	98
		c	April-June	71	
3385	Drew Reservoir net Inflow	32	March-July	47	68
		c	April-July	34	
3785	Honey near Plush	16.7	March-June	19.2	87
		c	April-June	16.3	
3660	Twentymile near Adel	24	March-June	28	86
		c	April-June	20	

AVAILABLE SOIL MOISTURE

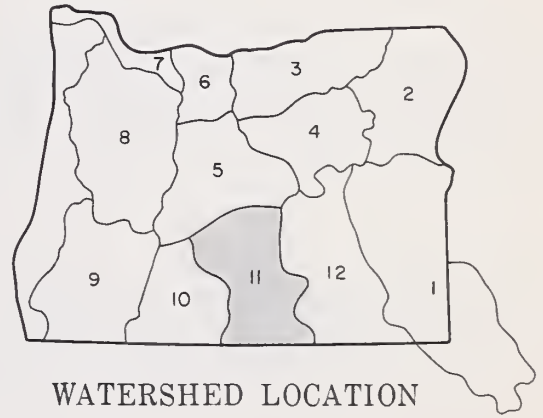
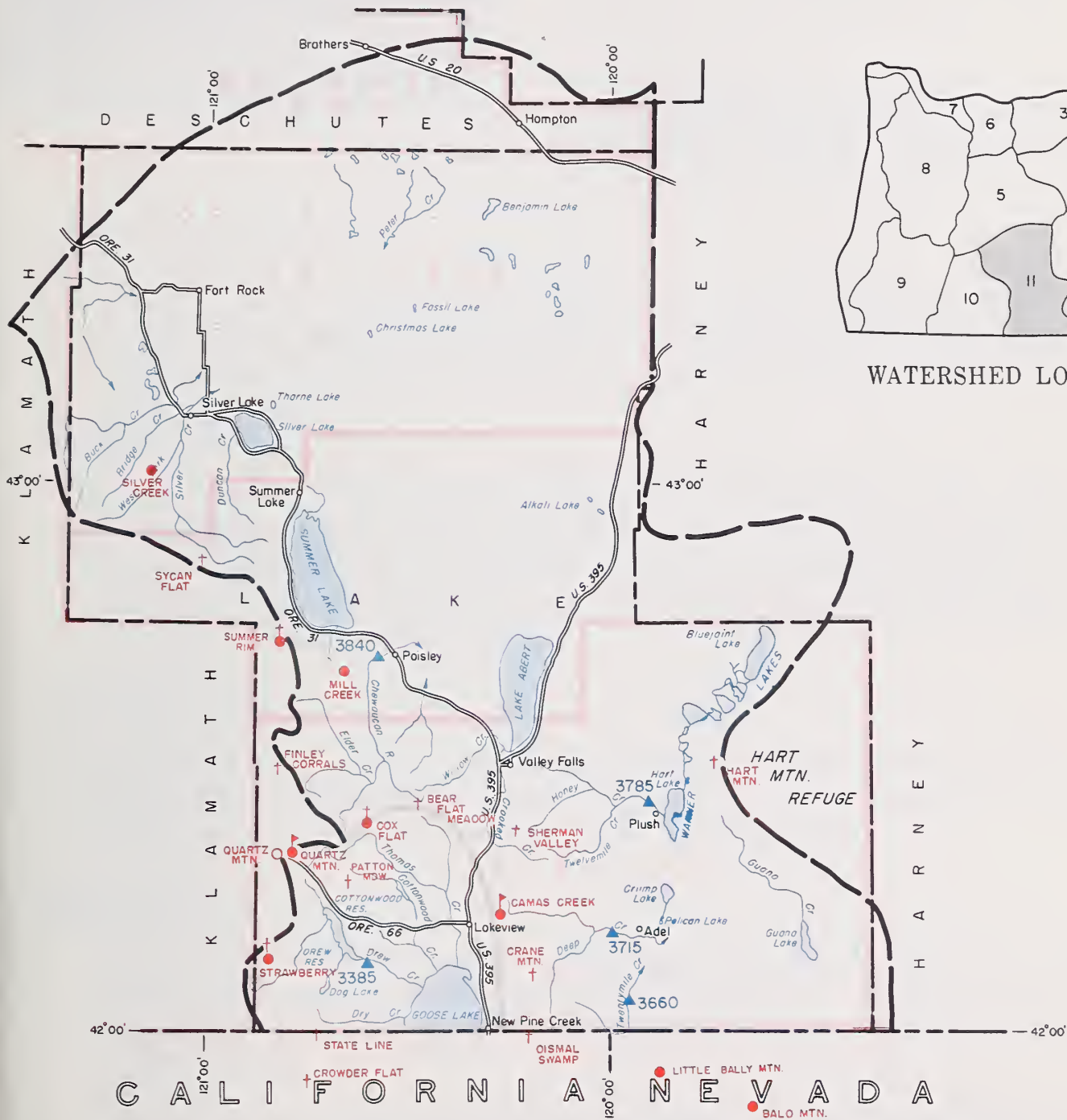
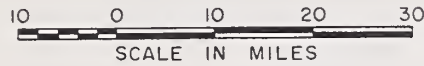
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Quartz Mountain	5320	48	10.7	1-29-62	1.1	0.8	--

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Bald Mountain (Nev.)	6720	c				
Bear Flat Meadow ^e	5900	1/24	51	14.3	4.7	--
Camas Creek	5720	1/29	29	8.6	4.4	8.5
Cox Flat ^e	5750	1/24	27	7.6	2.3	--
Crane Mountain ^e	6020	1/24	12	3.6	1.9	--
Crowder Flat ^e	5200	1/24	20	5.6	0.0	3.3*
Dismal Swamp ^e (Calif.)	7000	1/24	33	9.9	8.1	--
Finley Corrals ^e	6000	1/24	45	12.6	9.4	--
Hart Mountain ^e	6350	1/25	4	1.2	T	--
Little Bally Mountain ^e	6600	1/25	12	3.6	T	--
Mill Creek	6200	c				
Quartz Mountain (PP&L)	5504	1/29	24	7.0	2.4	5.8*
Quartz Mountain	5320	1/29	22	6.5	2.8	5.8
Sherman Valley ^e	6600	1/24	36	10.8	6.5	--
Silver Creek	4900	1/26	15	3.9	1.2	3.5*
State Line ^e	5750	1/24	36	10.1	3.1	--
Strawberry ^e	5600	1/30	29	8.0	3.1	7.6*
Summer Rim ^e	7200	1/24	32	9.0	10.5	--
Sycan Flat ^e	5500	1/24	32	9.0	3.9	--

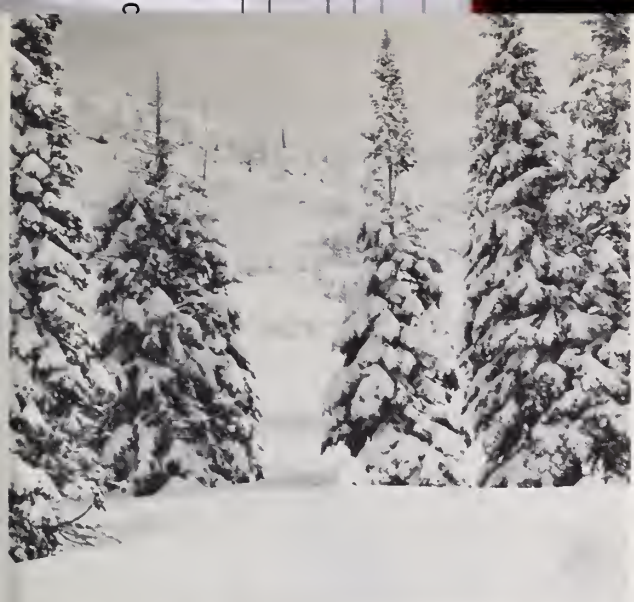
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed.
(*) 1943-57 Adjusted average.

LAKE COUNTY, GOOSE LAKE WATERSHEDS



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course
- † Aerial Snow Depth Gage
- COPCO Snow Station
- ▶ Soil Moisture Station



WATER SUPPLY OUTLOOK HARNEY BASIN WATERSHEDS OREGON

as of
FEBRUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in Harney County next spring and summer is the best since 1958. However, the relatively dry soils under the snowpack will reduce total streamflow by soaking up some of the early snowmelt water.

SNOW COVER

Water content of the mountain snowpack in the north half of the county is 93 percent greater than last year at this date. In the south half the snow is 24 percent greater than last year. In general, the snow is 12 percent less than the 15 year average (1943-57). January was excessively cold and dry and brought below average increases to the snowpack.

SOIL MOISTURE

The top 3 to 4 feet of soil on mountain watersheds under the snowpack is now wet up to 52 percent of capacity compared with 58 percent of capacity a year ago based on electronic measurements from five soil stations.

STREAMFLOW

Flow of the Silvies River for the March-June period is forecast to be 120,000 acre feet or 97 percent of the 15 year average (1943-57). At the same time Silver Creek near Riley is forecast to flow 25,000 acre feet or 96 percent average in the April-July period.

In the southern part of the county the Blitzen is forecast at 50,000 acre feet for March-June which is 79 percent average. Trout Creek near Denio is forecast at 7,700 acre feet or 84 percent average for the April-September period.

Remaining winter storms must produce at least average moisture supplies to insure a near adequate irrigation season.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley	Fair	Fair
Cow Creek	Average	Fair
Donner und Blitzen River	Fair	Fair
Mill - Coffeepot Creeks	Average	Fair
Rattlesnake Creek	Average	Fair
Silver Creek	Average	Fair
Silvies River	Average	Fair
Soldier - Prather Creeks	Average	Fair
Trout Creek	Fair	Poor
Whitehorse Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3960	Donner und Blitzen near Frenchglen	50	March-June	63	79
4030	Silver near Riley	25	April-July	26	96
3935	Silvies near Burns	120	March-June	124	97
4065	Trout near Denio	7.7	April-Sept.	9.2	84

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Blue Mountain Springs	5900	42	12.0	1-26-62	3.4	2.8	--
Fish Creek	7600	48	9.5	10-11-61	1.6	--	--
Folly Farm	4450	36	8.3	12-21-61	4.0 ^j	4.8 ^{h,j}	5.3 ^{h,j}
Silvies	6900	48	10.3	10-11-61	4.2	--	--
Snow Mountain	6300	48	10.4	c			
Starr Ridge	5150	36	6.1	1-26-62	3.3	3.6	5.1 ^h
Stinking Water	4800	48	11.7	12-21-61	10.4 ^j	11.2 ^{h,j}	10.3 ^{h,j}
Willow-Bald	5000	24	4.3	12-22-61	1.0	4.3 ^h	2.2 ^h

SNOW

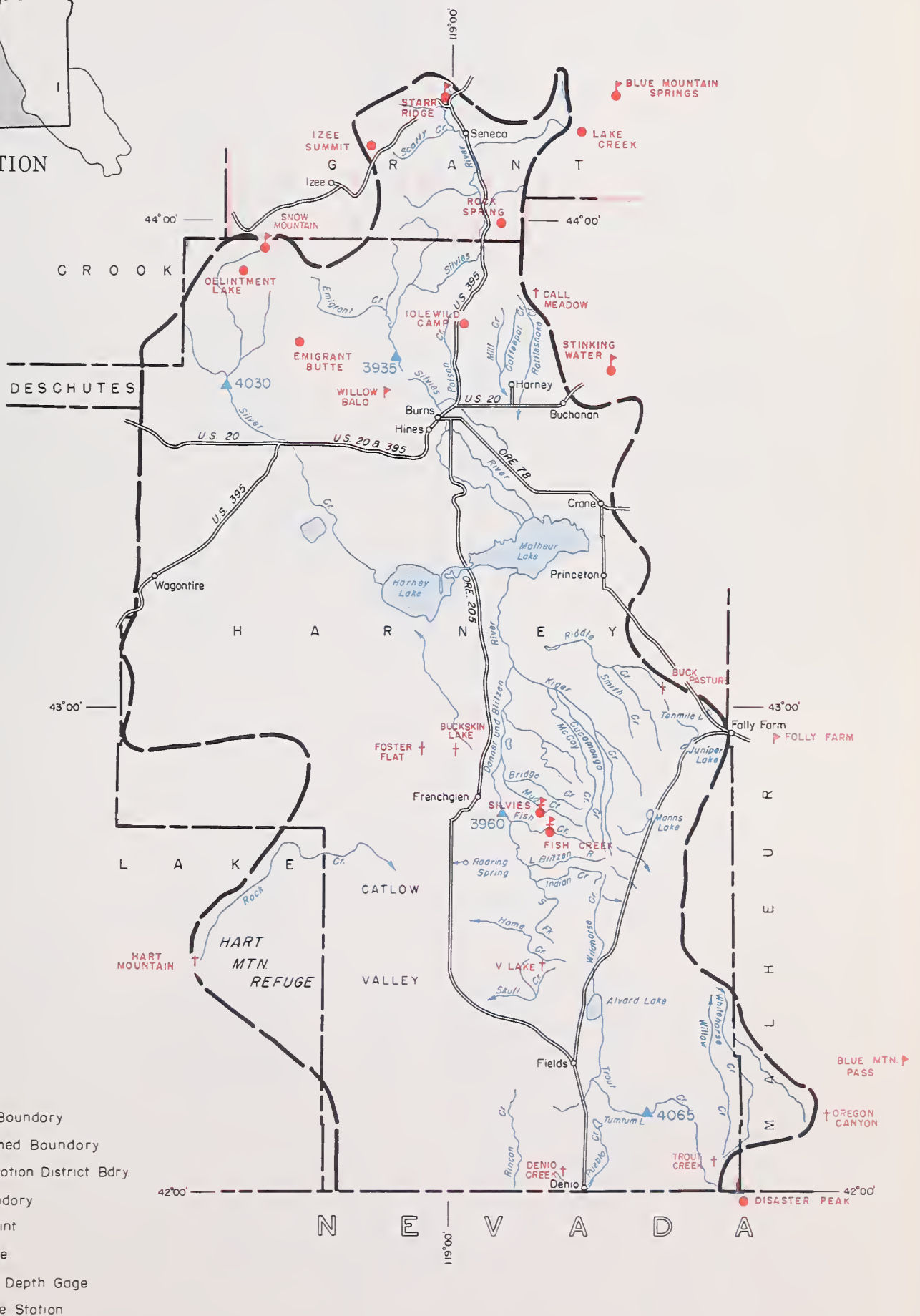
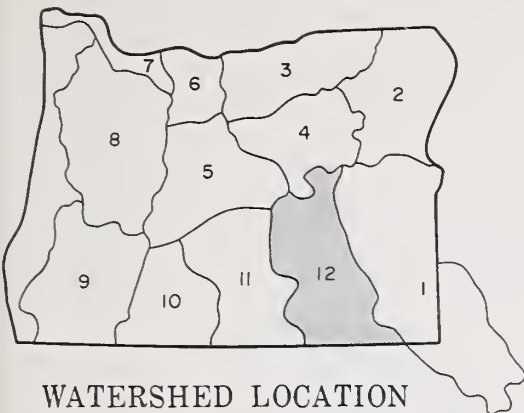
SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Blue Mountain Spring	5900	1/26	35	11.3	6.6	11.3
Buck Pasture ^e	5700	1/26	3	0.8	0.0	--
Call Meadows ^e	5340	1/26	6	1.6	1.2	--
Delintment Lake	5600	c				
Denio Creek ^e	6000	1/25	2	0.8	0.0	--
Disaster Peak	6500	c				
Emigrant Butte	5000	c				
Fish Creek ^e	7900	1/25	39	10.9	8.4	--
Hart Mountain ^e	6350	1/25	4	1.2	T	--
Idlewild Camp	5200	1/29	14	4.0	1.9	4.5
Izee Summit	5293	1/29	20	6.5	3.4	6.8*
Lake Creek (2 mi. south of Ranger Station)	5120	1/27	15	4.7	3.2	--
Oregon Canyon ^e	6950	1/26	14	3.9	2.4	--
Rock Spring	5100	1/29	11	2.5	1.2	4.7
Silvies ^e	6900	1/25	15	4.2	3.1	--
Snow Mountain	6300	c				
Starr Ridge	5150	1/26	16	5.1	2.2	5.0*
Stinking Water	4800	1/29	9	2.3	T	3.6*
Trout Creek ^e	7800	1/26	12	3.4	3.6	--
"V" Lake ^e	6600	1/25	2	0.8	3.4	--

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Partly estimated. (i) No Fall measurement. (j) Nearest current data. (*) 1943-57 Adjusted average.

HARNEY BASIN WATERSHEDS

10 0 10 20 30
SCALE IN MILES

WATERSHED LOCATION



This map illustrates the Pacific Northwest region, focusing on watersheds and snow courses. The map includes the following details:

- Geographical Labels:** States (WASHINGTON, OREGON, CALIFORNIA), major rivers (Columbia River, Willamette River, Snake River, etc.), and cities (Portland, Eugene, Medford, etc.).
- Legend:**
 - Watershed Boundary (thick solid line)
 - Sub-watershed Boundary (dashed line)
 - Snow Course (red dot)
 - COPCO Snow Station (open circle)
- Scale:** A scale bar indicating distances in miles (0 to 60).
- Coordinates:** Latitude and longitude markings along the map's edges.
- Topographic Features:** Mountains, lakes, and rivers are depicted with various line styles and shading.

7-S-19101-0

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon Agricultural Experiment Station
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY

- Douglas County Water Resources Survey

FEDERAL

- Department of Agriculture
 - Cooperative Extension Service
 - Forest Service
 - Soil Conservation Service
- Department of Commerce
 - Weather Bureau
- Department of the Interior
 - Bonneville Power Administration
 - Bureau of Land Management
 - Bureau of Reclamation
 - Fish and Wildlife Service
 - Geological Survey
 - National Park Service
- Department of National Defense
 - Corps of Army Engineers

PUBLIC UTILITIES

- California-Pacific Utilities Company
- Pacific Power and Light Company
- Portland General Electric Company
- The California Oregon Power Company

MUNICIPALITIES

- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS

- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warm Springs Irrigation District

PRIVATE ORGANIZATIONS

- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

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SOIL CONSERVATION SERVICE
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necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

*"The Conservation of Water begins
with the Snow Survey"*